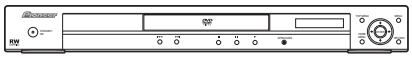
Pioneer sound.vision.soul

Service Manual



DV-300-S

ORDER NO.
RRV3561

DVD PLAYER

DV-300-S
DV-300-K

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Remarks
DV-300-S	WYXZT5	AC220-240V	2	
DV-300-S	WYXZT/UR5	AC220-240V	5	
DV-300-K	WYXZT5	AC220-240V	2	
DV-300-K	WYXZT/UR5	AC220-240V	5	

For details, refer to "Important Check Points for Good Servicing" .

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ⓒ**PIONEER CORPORATION 2007**

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SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trainedto properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING !

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

LASER DIODE CHARACTERISTICS

FOR DVD :	MAXIMUM OUTPUT POWER : 5 mW	
	WAVELENGTH : 650 nm	
FOR CD :	MAXIMUM OUTPUT POWER : 5 mW	
	WAVELENGTH : 780 nm	

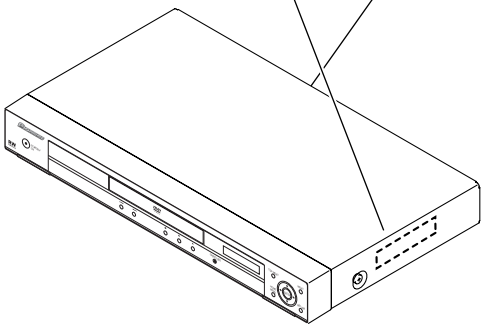
LABEL CHECK

Location: inside of the unit

CAUTION	:	CLASS 1M LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. 726000A140 SH
Vorsicht	:	KLASSE 1M LASER Strahlung: Bei geöffnetem Gerät nicht mit optischen Geräten in den Laserstrahl blicken.
PRECAUCIÓN	:	RADIACIÓN LASER CLASE 1M, AL ABRIR NO MIRAR DIRECTAMENTE CON INSTRUMENTOIS ÓPTICOS.
VIKTIGT	:	KLASS 1M LASER STRÅLNING: NÄR APPARATEN ÄR ÖPPEN, TITTA INTE RAKT IN I DEN, SPECIELLT INTE OM DU HAR GLASÖGON PÅ DIG.
Varoitus!	:	Luokka 1M:n lasersäteily: Älä koskaan katso laitteen sisään sen ollessa auki-ei myöskään silmälaseilla tai muilla optisilla laitteilla!
ADVARSEL	:	LASERSTRÅLER KLASSE 1M KIG IKKE DIREKTE IND I APPARATET, NÅR DETTE ER ÅBENT. IS/ER IKKE MED BRILLER ELLER ANDRE OPTISKE OBJEKTER.

CLASS 1
LASER PRODUCT

(Printed on the Rear Panel)



Additional Laser Caution

1.
- Laser diode is driving with Q2303,Q2305(650nm LD) and Q2302, Q2304(780nm LD)on the DVD MT PCB Assy.
  Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
- In the test mode ∗ , there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.

2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

∗ : See page 16.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

NOTES ON USE

NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

WHEN REPLACING DVD DECK

WHEN REPLACING DVD DECK

[Removing the DVD Deck]

Before removing Pick Up PCB and DVD PCB connector, short circuit the position shown in **Fig. 1** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[Installing the DVD Deck]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

NOTE

- Before your operation, please read “PREPARATION OF SERVICING” .
- Use the Lead Free solder.
- Manual soldering conditions
  - Soldering temperature: 320 ± 20˚C
  - Soldering time: Within 3 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
- When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to prevent the Flux smoke from it.

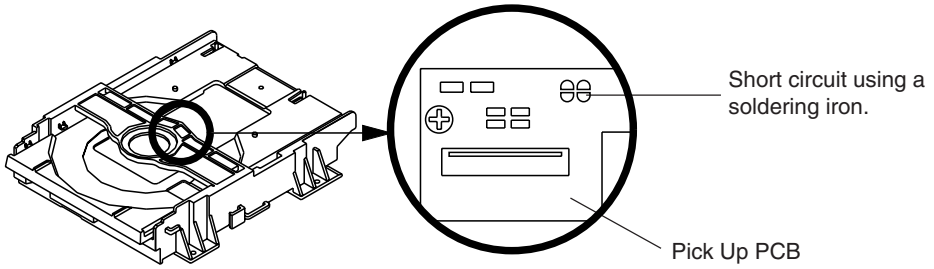


Fig. 1

DISC REMOVAL METHOD

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Slide the Rack Loading (White) toward the arrow direction by using a minus driver to release the lock. **(Refer to Fig. 1)**
2. Manually open the Tray.

NOTE: Please strongly pushing Rack Loading (White) to release the lock because the tray doesn't go out easily.

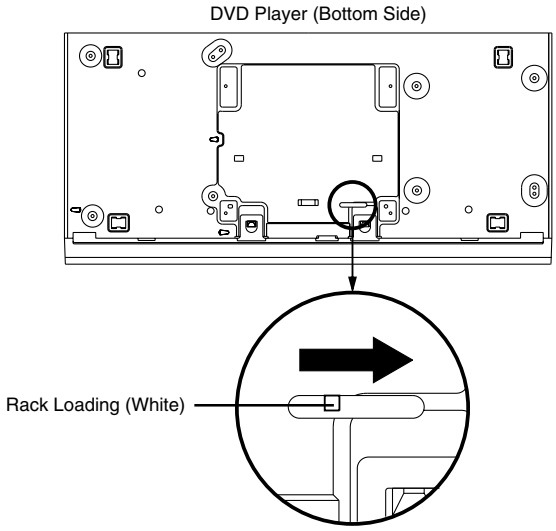


Fig. 1

PARENTAL CONTROL - RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Set the DVD to the Stand-by Mode.
2. Press and hold the 'STOP' key on the front panel.
3. Simultaneously press and hold the POWER key on the front panel.
4. The 4 digit password has now been cleared.

NOTE: The above procedure will reset ALL of the player's settings to the default factory state.

PREPARATION OF SERVICING

The laser diode used for a pickup head may be destroyed with external static electricity. Moreover, even if it is operating normally after repair, when static electricity discharge is received at the time of repair, the life of the product may be shortened.
Please perform the following measure against static electricity, be careful of destruction of a laser diode at the time of repair.

- Place the unit on a workstation equipped to protect against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

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JIGS LIST

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	diagnosis
DVD Test Disc (DVD-Video,NTSC)	GGV1025	Operation Check
DVD Test Disc (DVD-Video,PAL)	GGV-1101	Operation Check
CD Test Disc	STD-905	Operation Check

■ Lubricants and Glues list

Name	Lubricants and Glues No.	Remark
Daifree	GEM1036 (ZLX-ME413A)	Refer to "6.3 06 DVD MECHA SECTION"
Grease	GYA1001 (ZLB-PN397B)	Refer to "6.3 06 DVD MECHA SECTION"
Grease	GEM1018	Refer to "6.3 06 DVD MECHA SECTION"

■ Cleaning

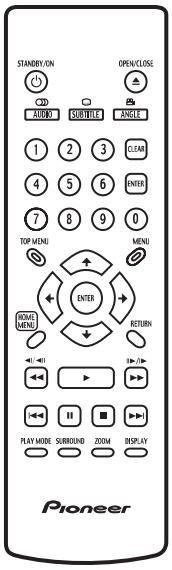
• Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools	Remark
Pickup leneses	Cleaning liquid : GEM1004	
	Cleaning paper : GED-008	

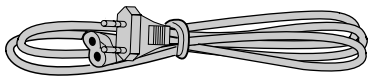
ACCESSORIES

● Accessories

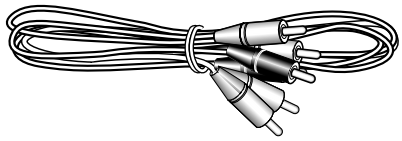
• Remote control ×1
(07650KY070)



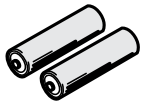
• Power cable ×1
(1206158802)



• Audio / Video cable(1.2m) ×1
(red/white/yellow)
(06CPBA2006)



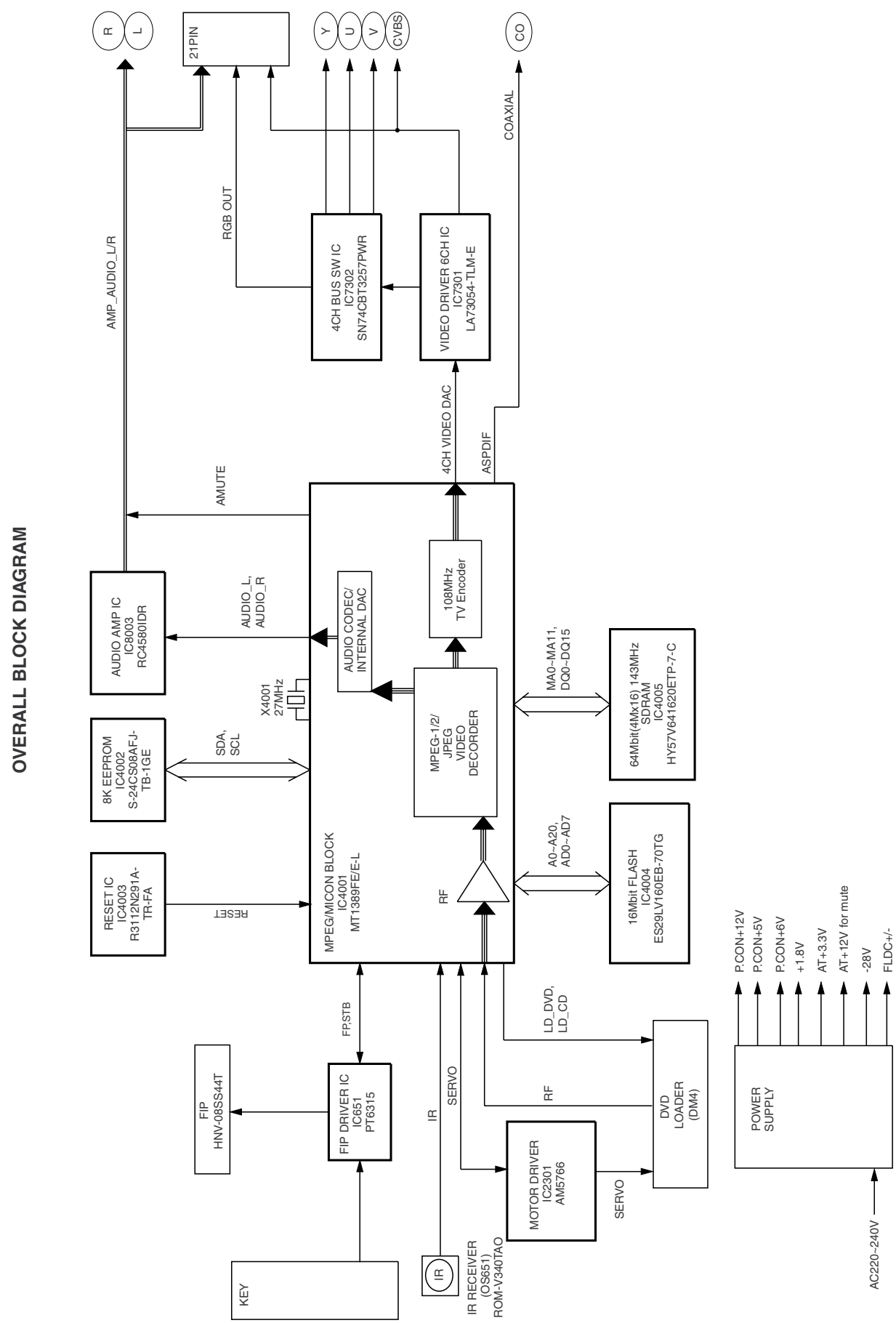
• Dry cell batteries ×2
(AA/R6P)



• Warranty Card
• Operating Instructions

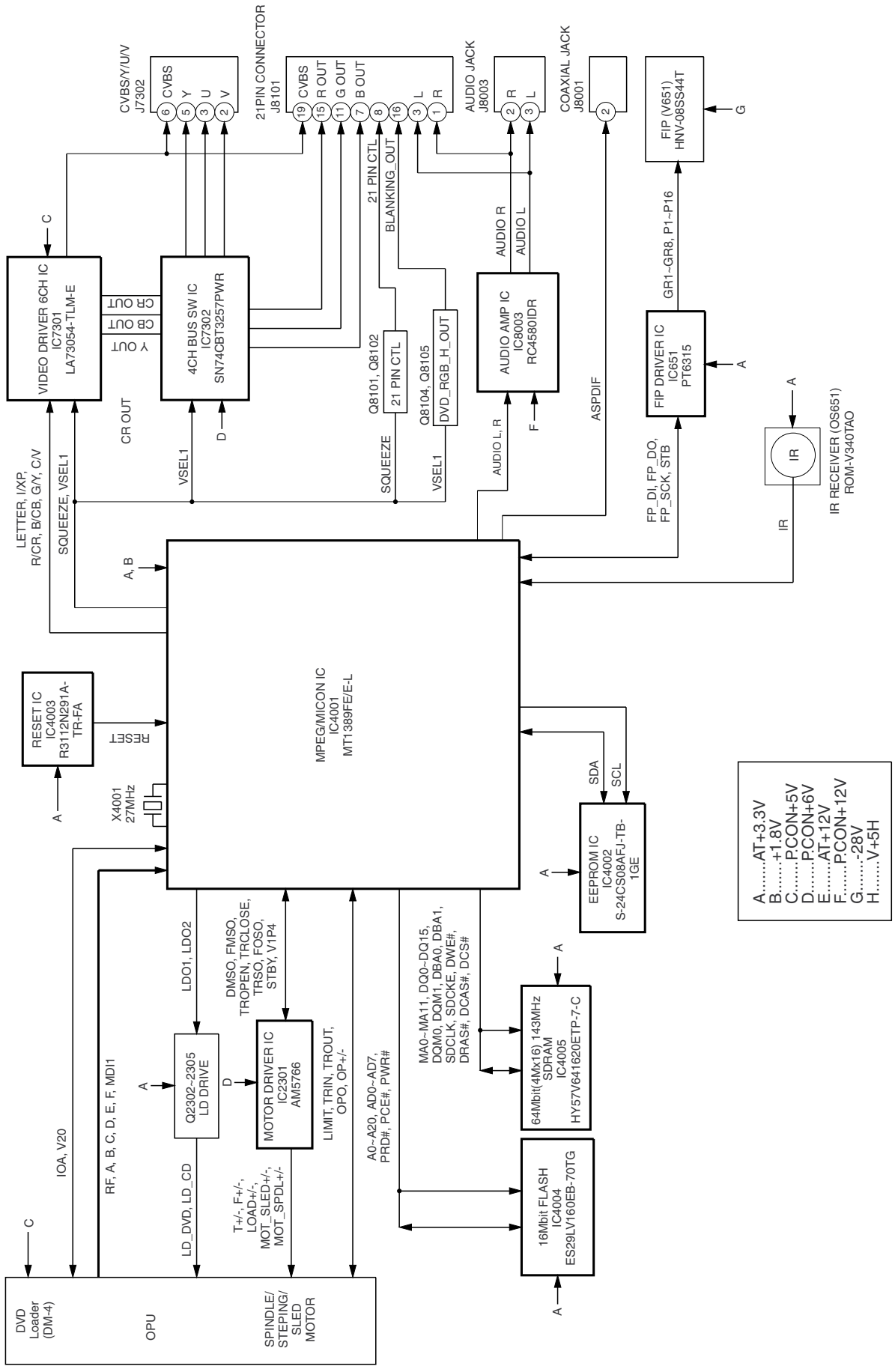
1. BLOCK DIAGRAM

1.1 OVERALL BLOCK DIAGRAM



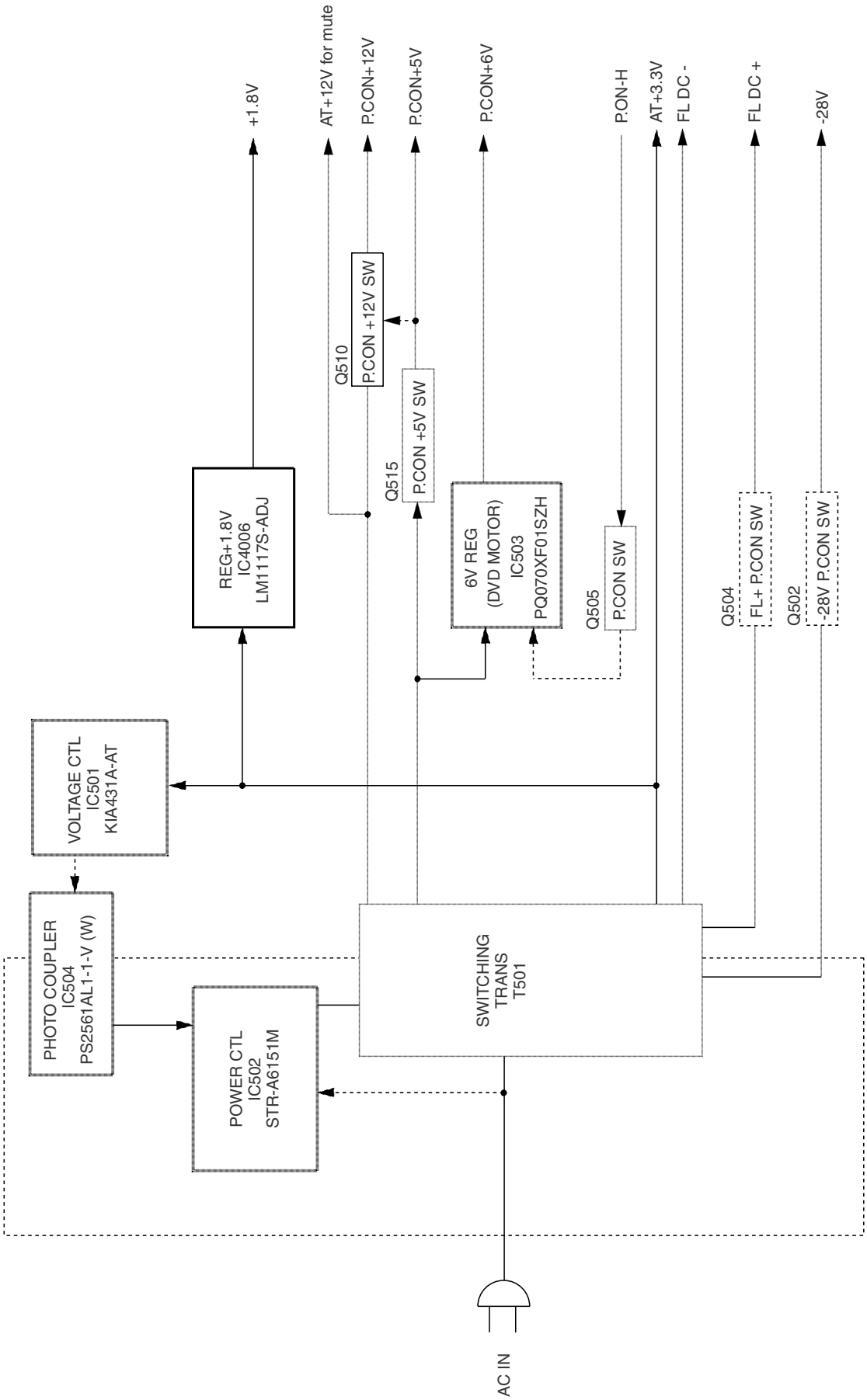
1.2 DVD LOADER BLOCK DIAGRAM

DVD LOADER/MPEG BLOCK DIAGRAM



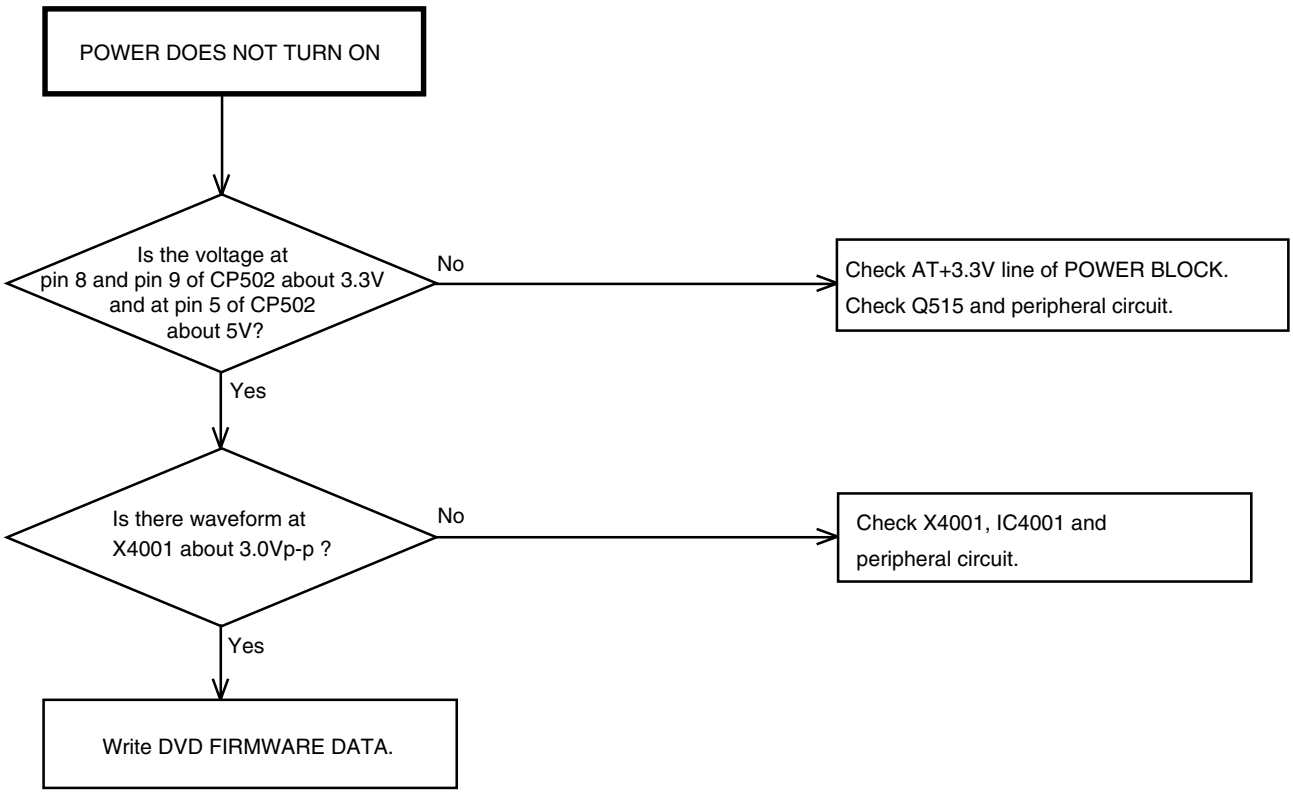
1.3 POWER BLOCK DIAGRAM

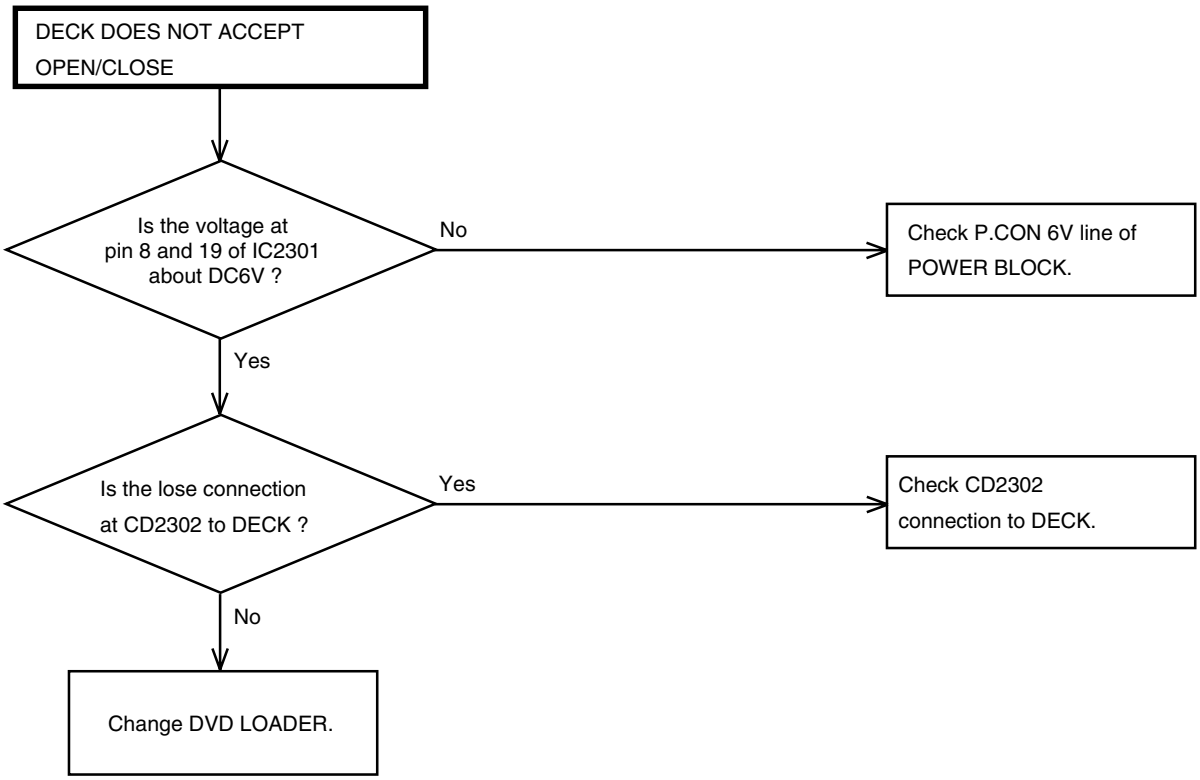
POWER BLOCK DIAGRAM

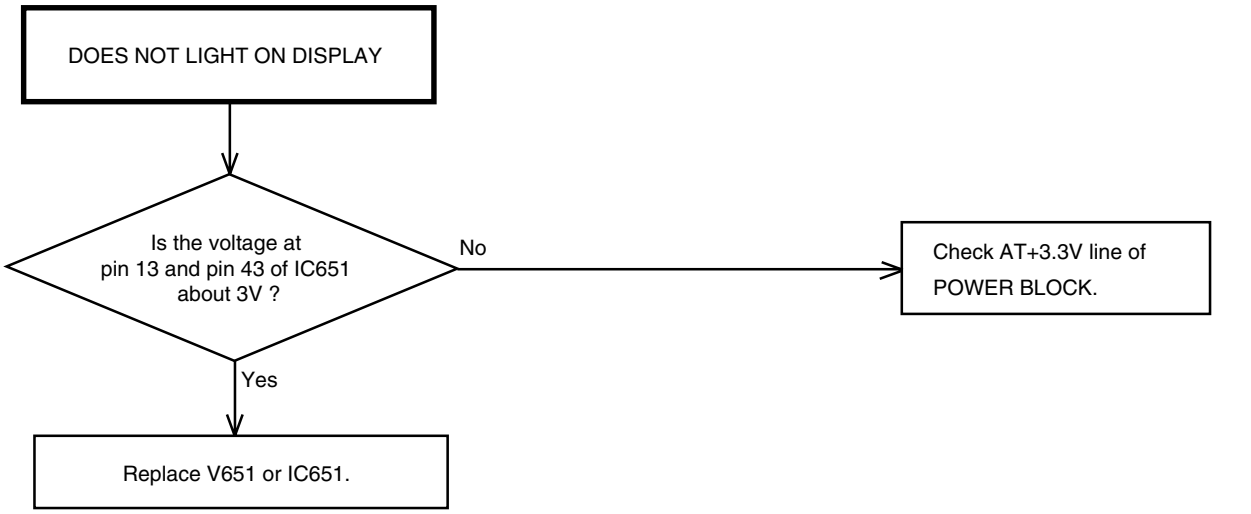


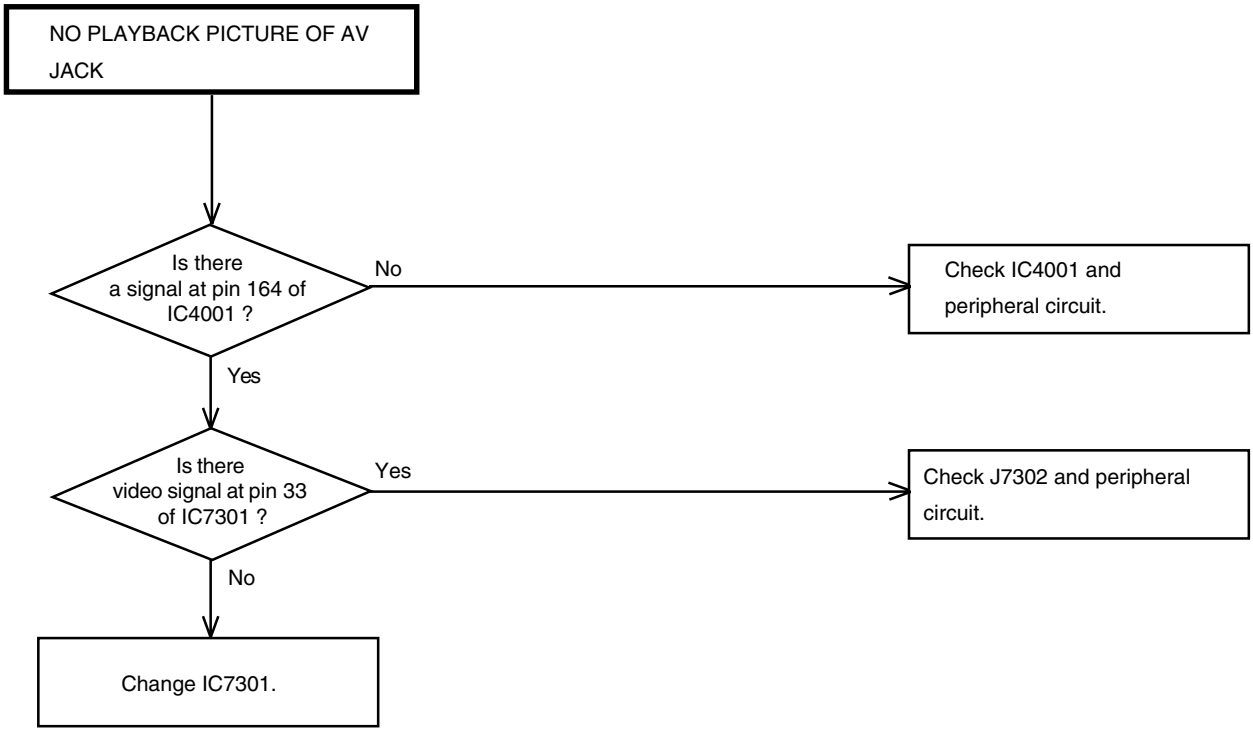
2. DIAGNOSIS

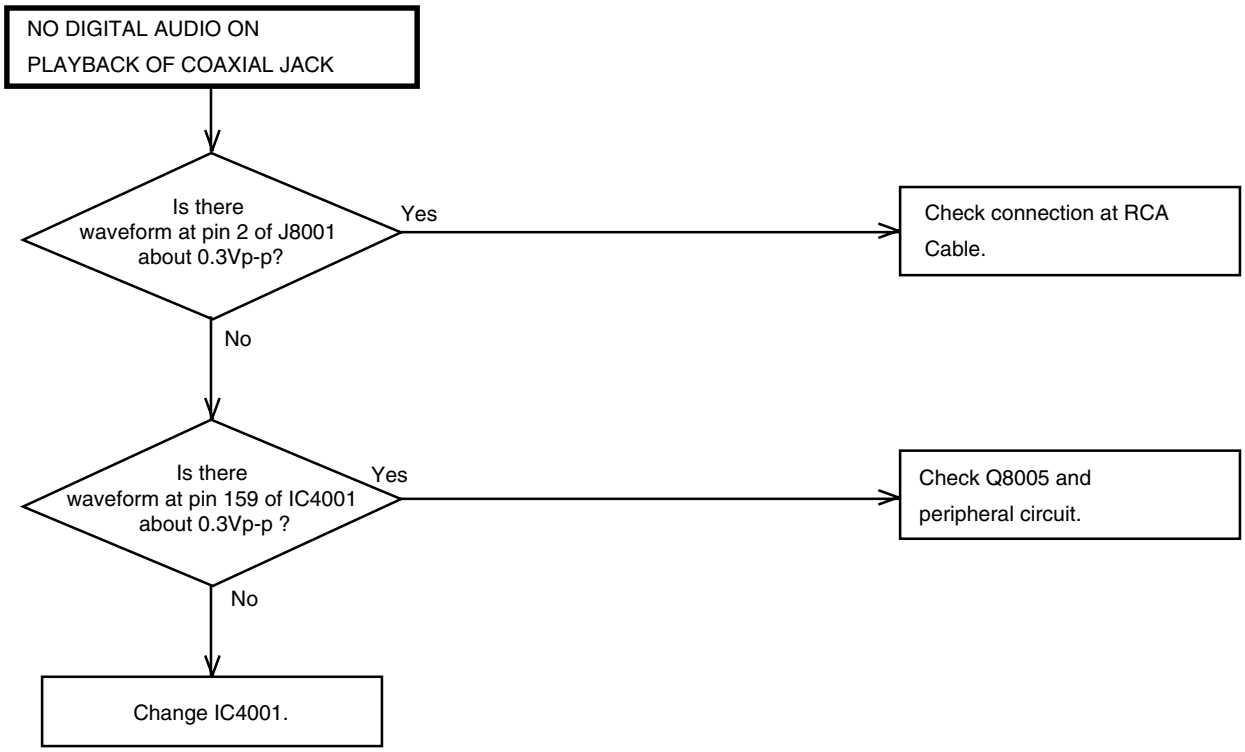
2.1 TROUBLE SHOOTING

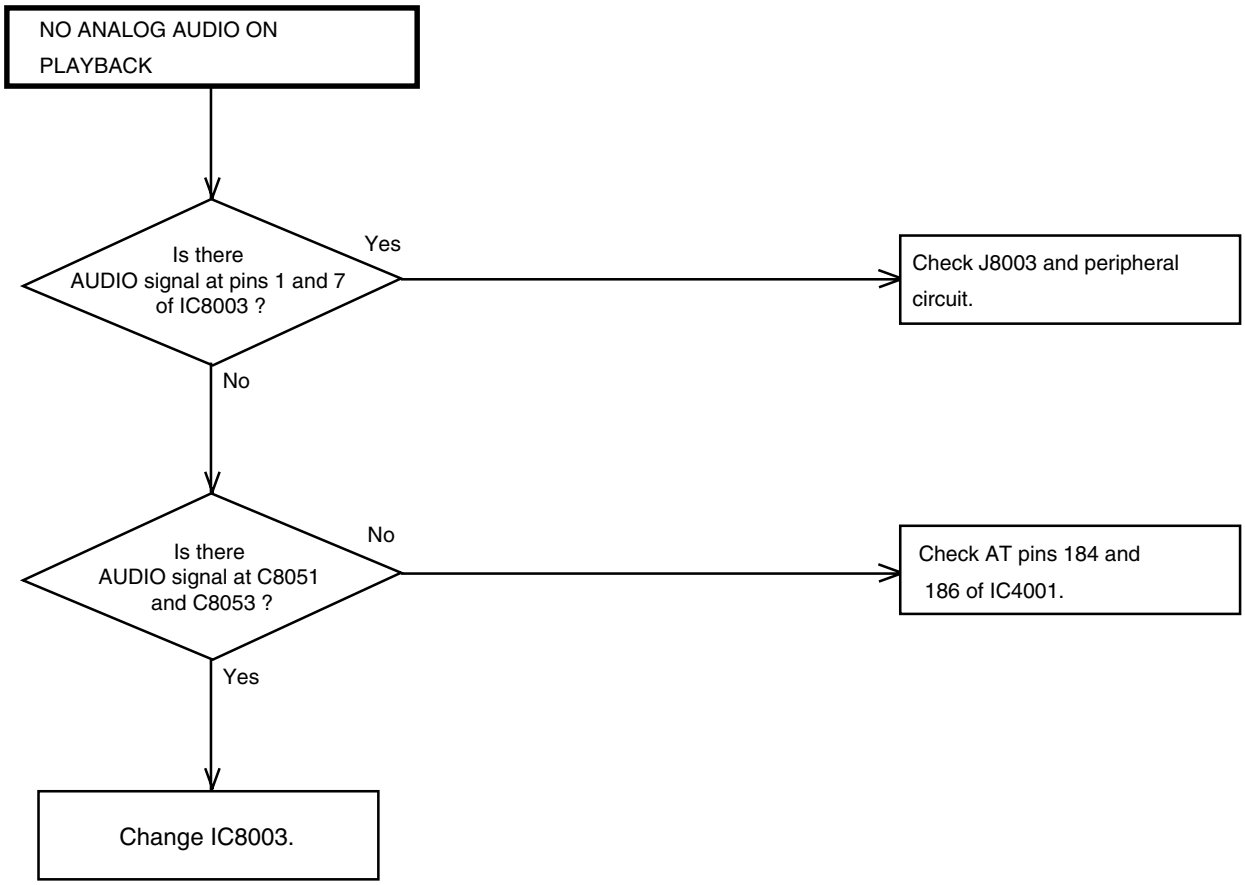





DOES NOT LIGHT ON DISPLAY
Is the voltage at pin 13 and pin 43 of IC651 about 3V ?
No
Check AT+3.3V line of POWER BLOCK.
Yes
Replace V651 or IC651.


NO PLAYBACK PICTURE OF AV JACK
Is there a signal at pin 164 of IC4001 ?
No
Check IC4001 and peripheral circuit.
Yes
Is there video signal at pin 33 of IC7301 ?
Yes
Check J7302 and peripheral circuit.
No
Change IC7301.


NO DIGITAL AUDIO ON PLAYBACK OF COAXIAL JACK
Is there waveform at pin 2 of J8001 about 0.3Vp-p?
Yes
Check connection at RCA Cable.
No
Is there waveform at pin 159 of IC4001 about 0.3Vp-p ?
Yes
Check Q8005 and peripheral circuit.
No
Change IC4001.


NO ANALOG AUDIO ON PLAYBACK
Is there AUDIO signal at pins 1 and 7 of IC8003 ?
Yes
Check J8003 and peripheral circuit.
No
Is there AUDIO signal at C8051 and C8053 ?
No
Check AT pins 184 and 186 of IC4001.
Yes
Change IC8003.

● Symptoms That May Occur When Any Of The Following ICs Is In Failure

IC	Symptoms
EEPROM (DVD MT PCB Assy : IC4002)	User's data cannot be stored in memory. The ID number is lost.
16M Flash ROM (DVD MT PCB Assy : IC4004)	The power cannot be turned on. Downloading of the firmware cannot be performed.
DVD IC (DVD MT PCB Assy : IC4001)	Any kind of symptoms (no power, a failure in any of the servo, video and audio systems, etc.) may be generated, because the DVD processing is performed by a single chip.
64M SDRAM (DVD MT PCB Assy : IC4005)	No power. Block noise is generated during playback.

2.2 METHOD FOR DIAGNOSING DEGRADATION OF THE LDS ON THE PICKUP ASSY

Case when this diagnosis is required :
When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), cannot be performed

How to diagnose

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the PICKUP Assy is suspected.
Measure the voltage between the two ends of one of the resistors mentioned below.

- **No playback of a DVD :**

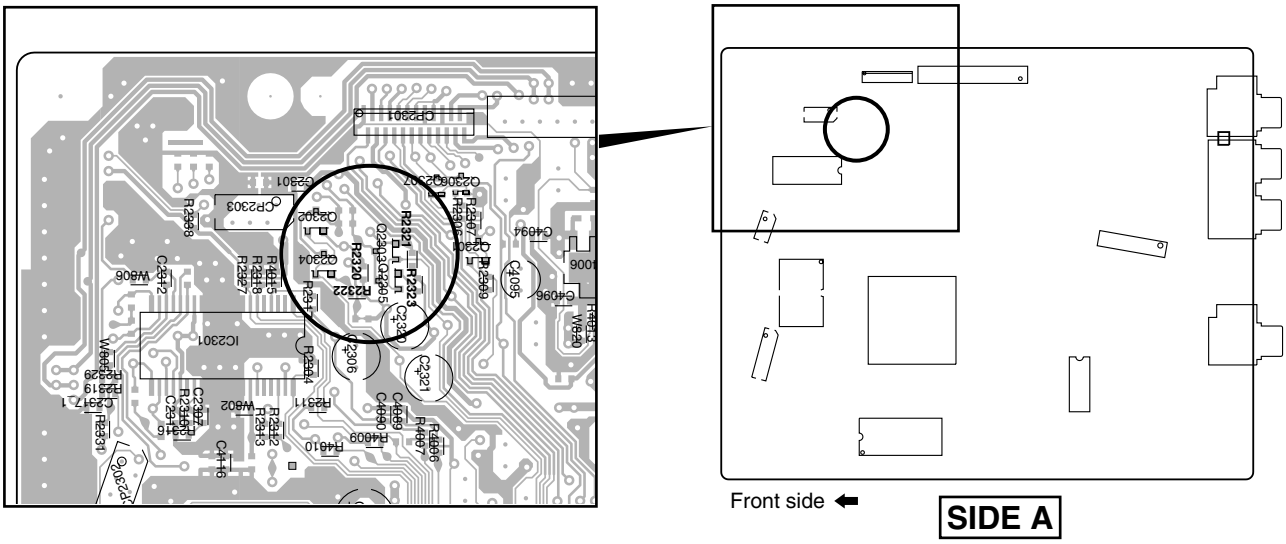
  Measure the voltage between the two ends of R2321 or R2323 on the DVDM Assy. If the voltage is 0.4 V or higher, the 650-nm LD is degraded.

- **No playback of a CD :**

  Measure the voltage between the two ends of R2320 or R2322 on the DVDM Assy. If the voltage is 0.4 V or higher, the 780-nm LD is degraded.

If the measurements show degradation of an LD, replace the PICKUP Assy.

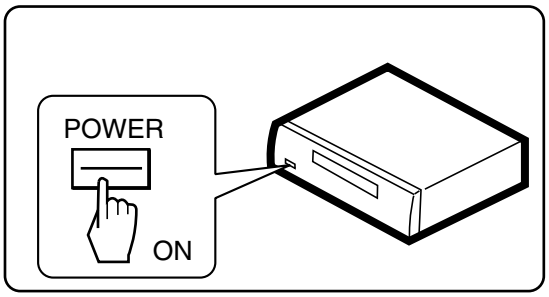
DVD MT PCB ASSY



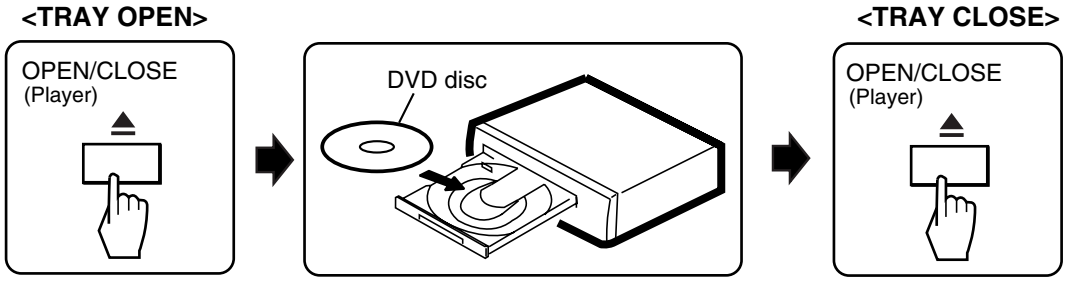
3. TEST MODE

3.1 TEST MODE PROCEDURE

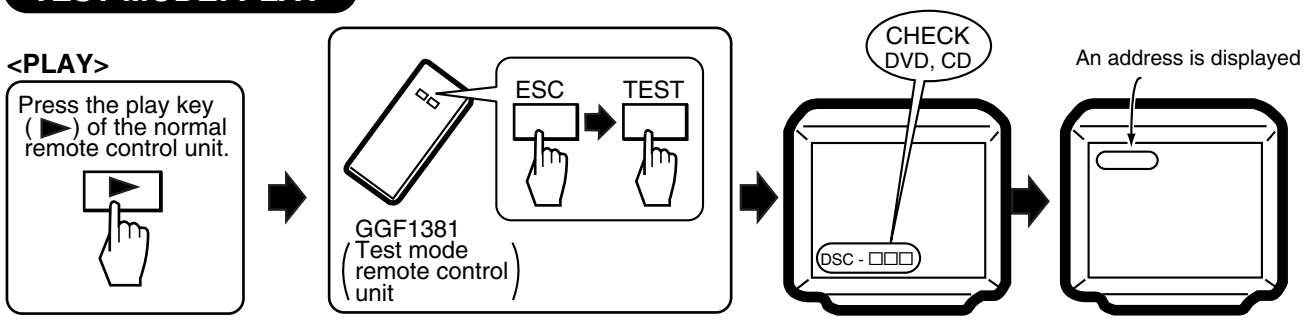
POWER ON



DISC SET



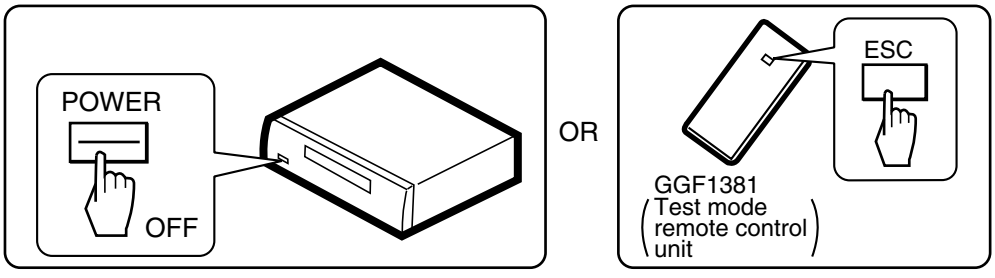
TEST MODE: PLAY



Notes:

- After going into test mode, if you play back the disc, "DISC-NON" is displayed.
- The video signal and the audio signal are outputted during the test mode.
- The SKIP key and the SCAN key are effective during the test mode.

TEST MODE: OFF



3.2 TEST MODE IN

Test Mode Functional Specification

① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Test mode remote control unit.

- Light the all FL and LEDs.
- OSD displays test mode.

Note:

* When pressing the keys of something, the FL displays "NO DISC" and the LED lighting disappears.

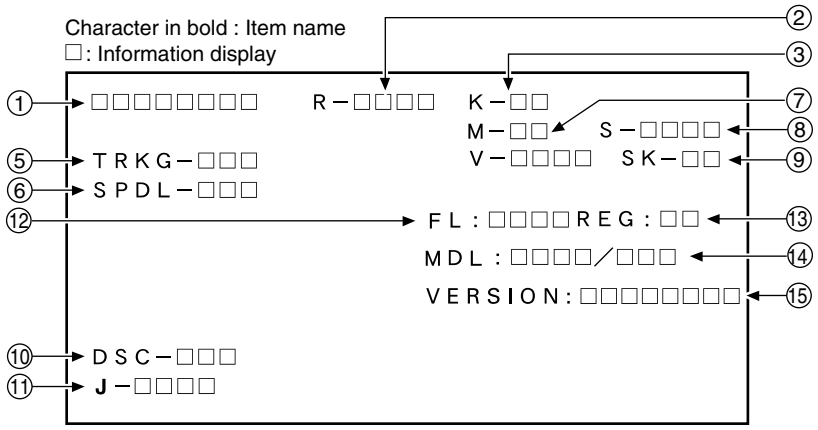
② Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit.

③ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).
CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

3.3 DISPLAY SPECIFICATION OF THE TEST MODE



① **Address indication**
The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)
[＊＊＊＊＊＊＊＊]
CD : ID indication [＊＊＊＊＊＊＊＊]

② **Code indication of remote control unit [R – ＊＊＊＊]**
In case of double code, display a 2nd code.

③ **Main unit keycode indication [K – ＊＊]**

⑤ **Tracking status [TRKG – ＊＊＊]**
Tracking on : [ON]
Tracking off : [OFF]

⑥ **Spindle status [SPDL – ＊＊＊]**
[OFF], [CLV]

⑦ **Mechanism (loading) position value [M – ＊＊]**
Unknown : [01] or [41]
Open state : [04]
Close state : [08]
During opening : [12]
During closing : [22]

⑧ **Slider position [S – ＊＊＊＊]**
In Side Switch ON : [01]
In Side Switch OFF : [00]

⑨ **Output video system [V – ＊＊＊＊]**
NTSC system : [NTSC]
PAL system : [PAL]
Automatic setting : [AUTO]

Scart terminal output [SK – ＊＊]
(Display only the WY model which can do the output setting of scart terminal.)
VIDEO : [00]
S-VIDEO : [01]
RGB : [02]

⑩ **Disc sensing [DSC – ＊＊＊]**
The type of discs loaded is displayed.
[DVD], [CD], [VCD], [ ]

⑪ **Jitter value [J – ＊＊＊＊]** Note:Don't use it.

⑫ **Version of the FL controller [FL: ＊＊＊＊]**

⑬ **Region setting of the player [REG: ＊]**
Setting value : [1] to [6]

⑭ **Destination setting of the FL controller [MDL: ＊＊＊＊ / ＊＊＊]**
Four characters in the front represent code 01.
Three characters in the back represent the destination code.
J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM : /RAM,
LB: /LB, WY: /WY

⑮ **Version of the flash ROM [VERSION: ＊＊＊＊＊＊＊＊]**

3.4 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear and region / revision indication		CLEAR (∗1)	A8-45
Average value measurement of DVD error rate		5 (∗1)	A8-05
CD error rate measurement		5 (∗1)	A8-05
Scart terminal output : VIDEO	WY, models equipped with Scart terminal	AUDIO	AF-BE
Scart terminal output : S-VIDEO		SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
ZOOM ON (X2 -> X4 -> x1)		ZOOM	AF-37
Service mode indication (error rate indication, etc.)		CHP/TIM (∗1)	A8-13
Model information indication		CHAP (∗1)	A8-40
Title search Input mode IN Title No. input Search execution		SIDE A (∗1) Numbers (∗1) PLAY (∗1)	A8-4D A8-00 to A8-09 A8-17
Region confimation mode		A.MON (∗1) Numbers (∗1)	A8-1E A8-01 to A8-08

∗1 : Test mode remote control unit

• Service mode indication (ESC + CHP/TIM keys)
ID Address
The error rate is always displayed in exponential notation, e.g., ∗.∗ ∗ e - ∗, for both DVDs and CDs.
EDC/ID/AV 1 error history (ID Address, EDC/ID Error, last eight errors)

• Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)
The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

• Indication of model information (ESC + CHAP keys)
The items from 12 to 15 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to CHIP VERSION, and M is changed to FL VERSION. For details, see 7.1.3.

• Region confirmation mode (ESC + A.MON [Test mode remote control unit] + "1"-"8" [Test mode remote control unit] keys)
After you press the A.MON key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

3.5 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE

• Display during Service Mode

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.
To quit, press the ESC key.

Service mode display

① ID Address
② Error rate (always displayed), in exponential notation

ERROR RATE : * * * * * * *
(* * * *)
Number of error

• Calculation of the average error rate
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

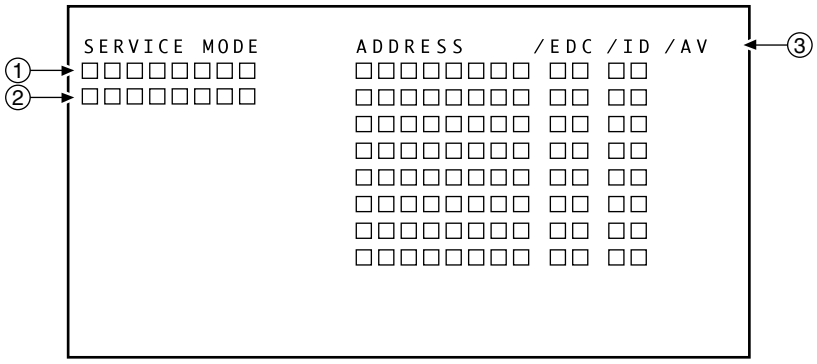
ex) For DVDs

• Step 1		• Step 2	
△△e -□		△△e -4	
△△e -6	: OK	3.0e -4	: OK
△△e -5	: OK	4.0e -4	: OK
△△e -4	: Refer to Step 2	5.0e -4	: OK
△△e -3	: NG	6.0e -4	: NG
△△e -2	: NG	7.0e -4	: NG

③ EDC/ID error history (ID Address, EDC/ID errors, last eight errors)

Note:
* Error of AV1 is not supported in this player.

Indication plan contents



Character in bold : Item name
□: Information display

4. DISASSEMBLY

4.1 EXTERIOR SECTION

1. REMOVAL OF MECHANICAL PARTSAND P.C. BOARDS

1-1: TOP CABINET/FRONT CABINET/OPERATION PCB (Refer to Fig. 1-1)

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connector: (CP4002).
4. Unlock the 4 supports ②.
5. Remove the Front Cabinet in the direction of arrow (B).
6. Removethe9screws ③.
7. Remove the Operation PCB in the direction of arrow (C).

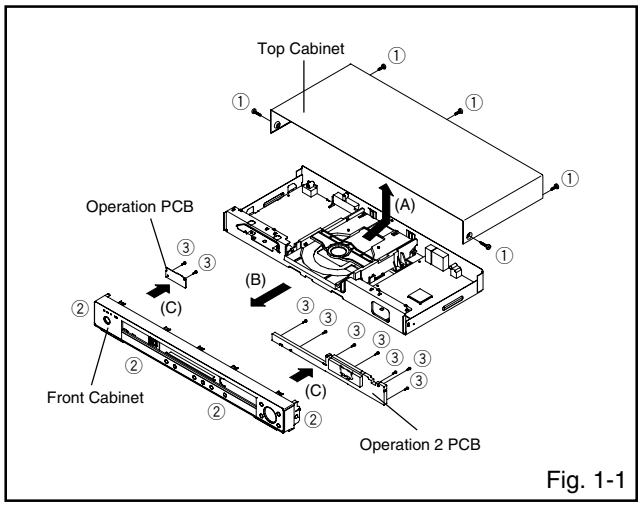


Fig. 1-1

1-2: POWER PCB (Refer to Fig. 1-2)

1. Disconnect the following connectors: (CP502 and CP503).
2. Remove the 2 screws ①.
3. Remove the 4 screws ②.
4. Remove the Power PCB in the direction of arrow.

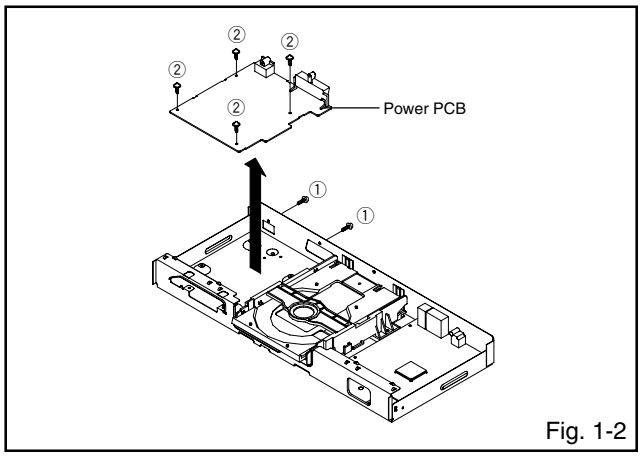


Fig. 1-2

1-3: DVD DECK (Refer to Fig. 1-3)

1. Short circuit the position shown in Fig. 1-3 using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Disconnect the following connectors: (CP2301, CP2302 and CP2303).
3. Remove the 4 screws ①.
4. Remove the DVD Deck in the direction of arrow.

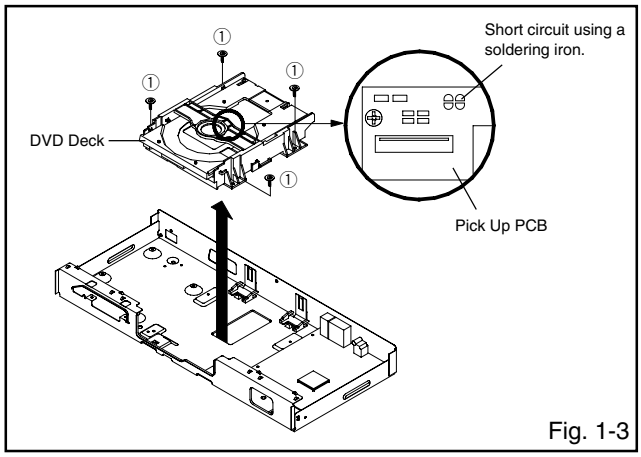


Fig. 1-3

NOTE

1. Before your operation, please read “PREPARATION OF SERVICING”.
2. Use the Lead Free solder.
3. Manual soldering conditions
   - Soldering temperature: 320 ± 20˚C
   - Soldering time: Within 3 seconds
   - Soldering combination: Sn-3.0Ag-0.5Cu
4. When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to keep the Flux smoke away from it.
5. When installing the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD MT PCB connector.

1-4: DVD MT PCB (Refer to Fig. 1-4)

1. Remove the 3 screws ①.
2. Remove the 4 screws ②.
3. Remove the DVD MT PCB in the direction of arrow.

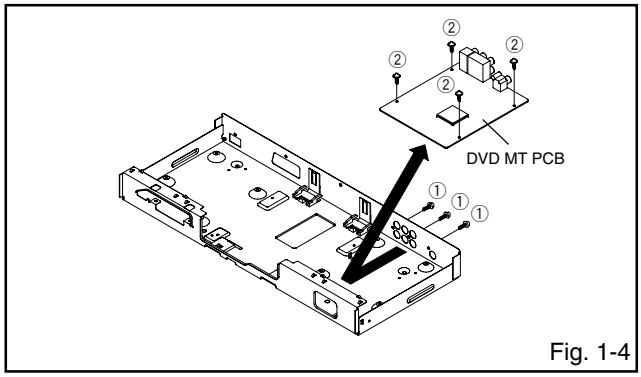


Fig. 1-4

4.2 DVD DECK SECTION

2. REMOVAL OF DVD DECK PARTS

NOTE

1. Disassemble only the DVD DECK PARTS parts listed here. Minute adjustments are needed if the disassembly is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

2-1: TRAY (Refer to Fig. 2-1-A)

1. Set the Tray opened. **(Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)**
2. Unlock the 2 supports ① and draw it while sagging the Tray.

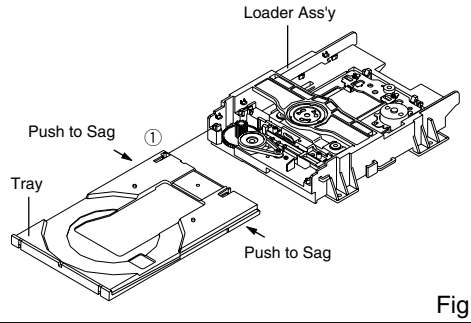


Fig. 2-1-A

NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 2-1-B so that the each markers are met.

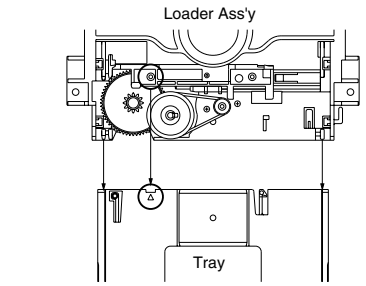


Fig. 2-1-B

2-2: TRAVERSE ASS'Y (Refer to Fig. 2-2-A)

1. Remove the screw ①.
2. Unlock the 2 supports ②.
3. Remove the Insulator (R) from the Loader Sub Ass'y.
4. Remove the Traverse Ass'y.

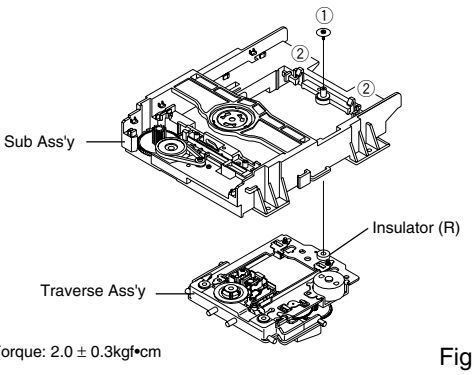


Fig. 2-2-A

NOTE

1. In case of the Traverse Ass'y, install it from (1) to (4) in order. **(Refer to Fig. 2-2-B)**
2. In case of the Traverse Ass'y installation, hook the wire on the Loader Ass'y as shown Fig. 2-2-C.

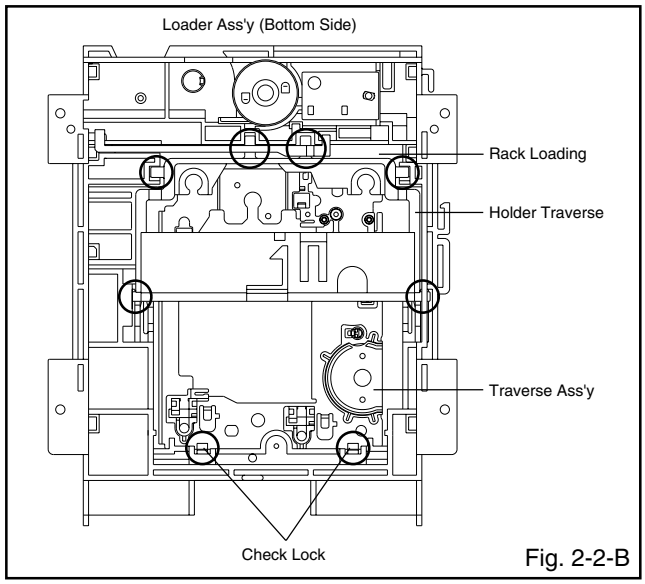


Fig. 2-2-B

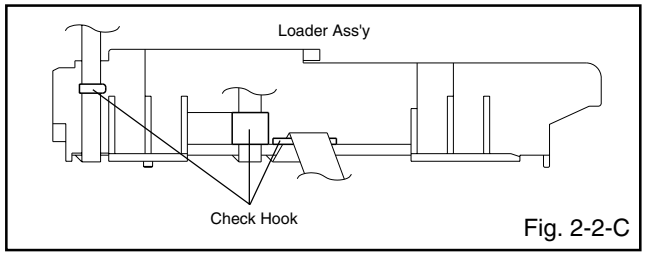


Fig. 2-2-C

2-3: LOADING MOTOR PCB ASS'Y/ LOADING BELT (Refer to Fig. 2-3-A)

1. Remove the Loading Belt.
2. Remove the screw ①.
3. Remove the Loading Motor PCB Ass'y.
4. Remove the 2 screws ②.
5. Remove the Loading Motor.
6. Remove the Gear Pulley.

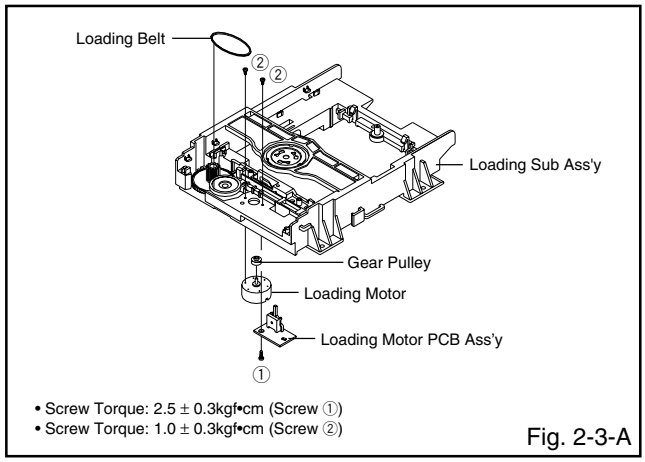


Fig. 2-3-A

NOTE

1. In case of the Pulley Motor installation, check if the value of the Fig. 2-3-B is correct.
2. When installing the wire of the Loading Motor PCB Ass'y, install it correctly as Fig. 2-3-C.
   Manual soldering conditions
   • Soldering temperature: 320 ± 20˚C
   • Soldering time: Within 3 seconds
   • Soldering combination: Sn-3.0Ag-0.5Cu
3. When installing the Loading Motor PCB Ass'y, install it correctly as Fig. 2-3-D.
4. In case of the Loading Motor PCB Ass'y installation, hook the wire on the Loader Sub Ass'y as shown Fig. 2-3-E.

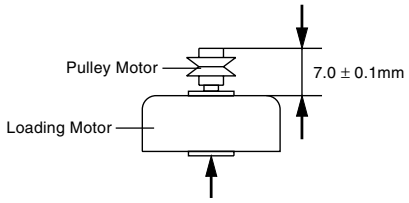


Fig. 2-3-B

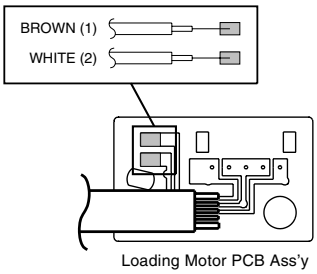


Fig. 2-3-C

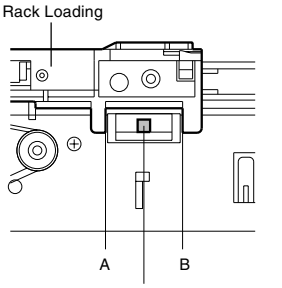


Fig. 2-3-D

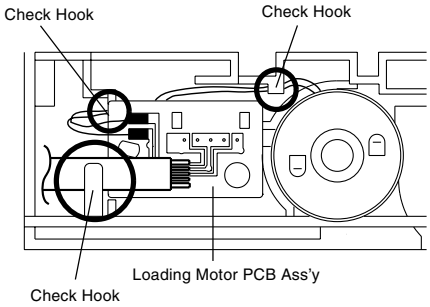


Fig. 2-3-E

2-4: RACK LOADING/MAIN GEAR/PULLEY GEAR (Refer to Fig. 2-4-A)

1. Unlock the support ② and remove the Gear Pulley.
2. Remove the Gear Main.
3. Press down the catcher ① and slide the Rack Loading.

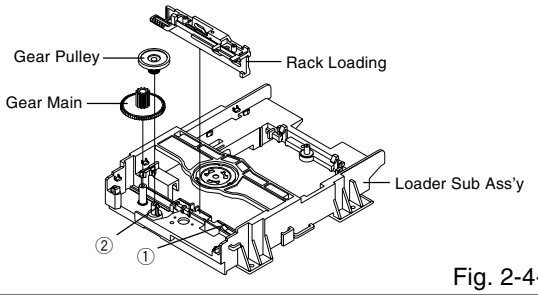


Fig. 2-4-A

NOTE

1. In case of the Rack Loading installation, hook the Rack Loading on the Loader Sub Ass'y as shown Fig. 2-4-B.
2. When installing the Gear Main, take care the direction of up or down as shown Fig. 2-4-C.

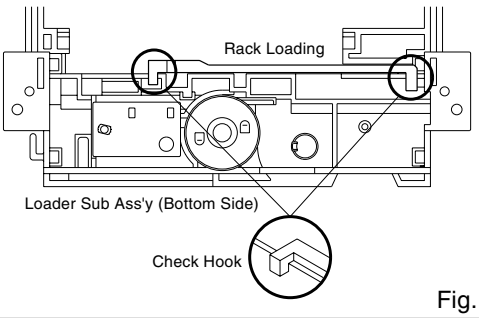


Fig. 2-4-B

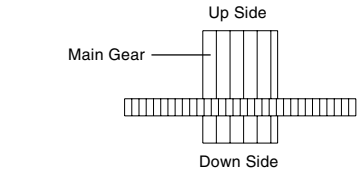


Fig. 2-4-C

2-5: CLAMPER ASS'Y (Refer to Fig. 2-5-A)

1. Press the Clamper and rotate the Plate Clamper clockwise, then unlock the 3 supports ①.
2. Remove the Plate Clamper, Magnet Clamper and Clamper.

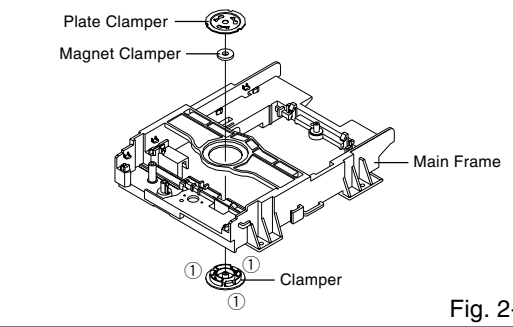


Fig. 2-5-A

NOTE

1. In case of the Clamper Ass'y installation, install correctly as Fig. 2-5-B.

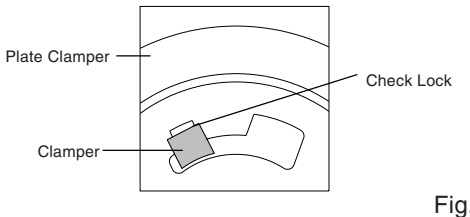


Fig. 2-5-B

2-6: HOLDER TRAVERSE/INSULATOR (F)/INSULATOR (R) (Refer to Fig. 2-6-A)

1. Remove the Holder Traverse.
2. Remove the 2 Insulator (F).
3. Remove the Insulator (R).

Pickup leneses
GEM1004
GED-008

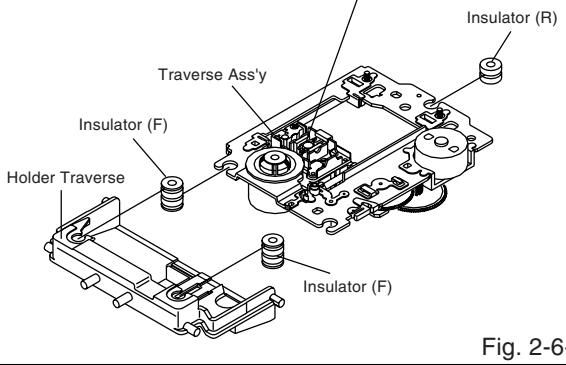


Fig. 2-6-A

NOTE

1. In case of the Insulator (F) installation, install correctly as Fig. 2-6-B.

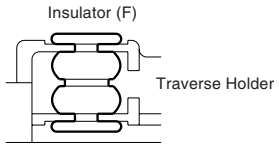
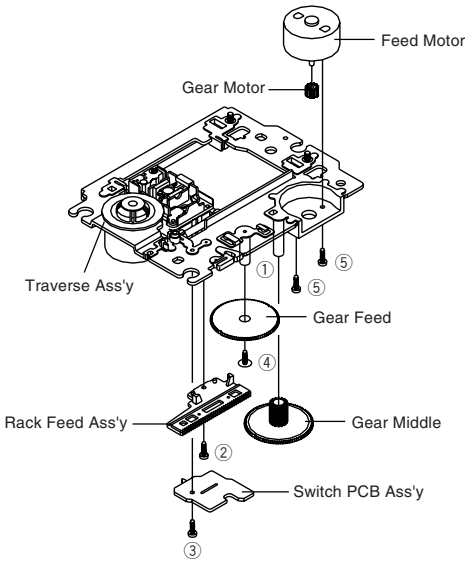


Fig. 2-6-B

2-7: SWITCH PCB ASS'Y/GEAR MIDDLE/GEAR FEED/ RACK FEED ASS'Y/FEED MOTOR (Refer to Fig. 2-7-A)

1. Unlock the support ①.
2. Remove the Gear Middle.
3. Remove the screw ②.
4. Remove the Rack Feed Ass'y.
5. Remove the screw ③.
6. Remove the Switch PCB Ass'y.
7. Remove the screw ④.
8. Remove the Gear Feed.
9. Remove the 2 screws ⑤.
10. Remove the Feed Motor.
11. Remove the Gear Motor.



• Screw Torque: 1.3 ± 0.3kgf•cm (Screw ②)
• Screw Torque: 3.0 ± 0.3kgf•cm (Screw ③)
• Screw Torque: 1.0 ± 0.3kgf•cm (Screw ④, ⑤)

Fig. 2-7-A

NOTE

1. When installing the Rack Feed Ass'y, push both ends to align the teeth as shown Fig. 2-7-B. Then install it.
2. In case of the Gear Motor installation, check if the value of the Fig. 2-7-C is correct.
3. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 2-7-D.
   Manual soldering conditions
   • Soldering temperature: 320 ± 20˚C
   • Soldering time: Within 3 seconds
   • Soldering combination: Sn-3.0Ag-0.5Cu
4. After the assembly of the Traverse Ass'y, hook the wire on the Traverse Ass'y as shown Fig. 2-7-E.

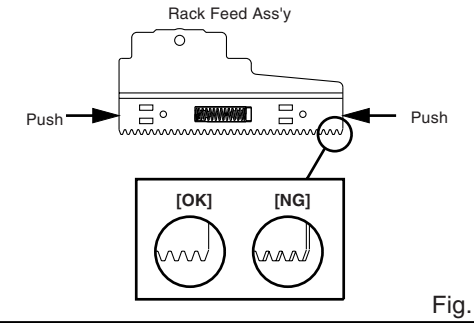


Fig. 2-7-B

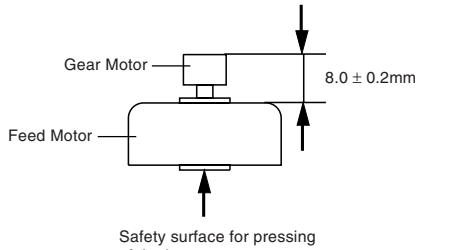


Fig. 2-7-C

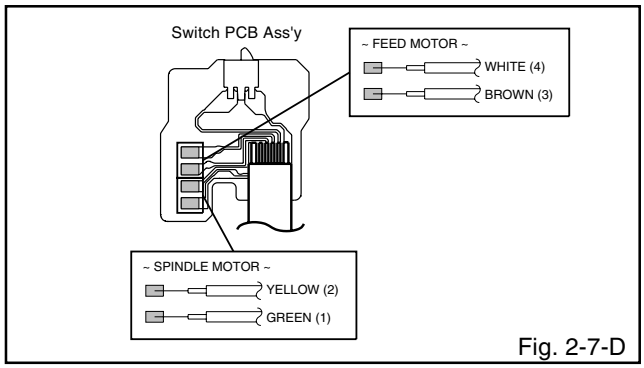
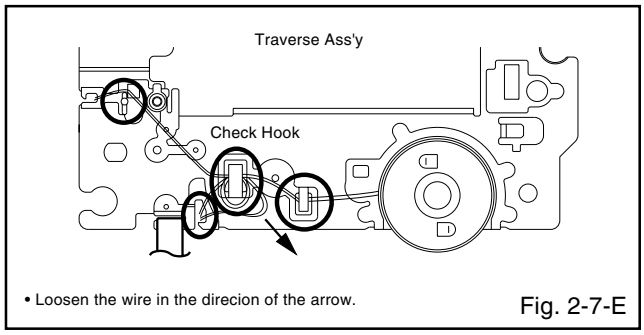


Fig. 2-7-D



• Loosen the wire in the direcion of the arrow.

Fig. 2-7-E

2-8: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 2-8.

NOTE

1. Do not make the folding lines except the specified positions for the FFC.

[24 pin FFC]

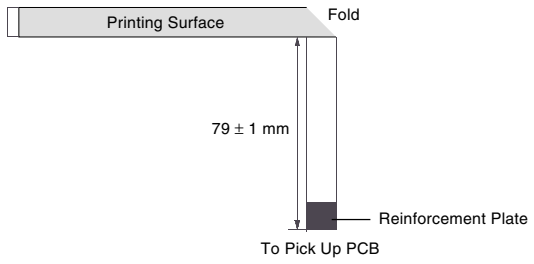


Fig. 2-8

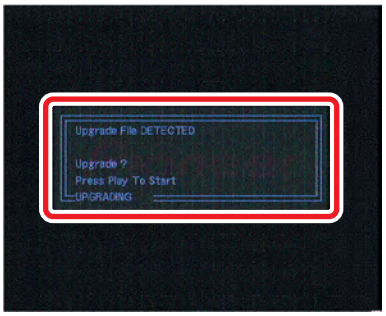
5. EACH SETTING AND ADJUSTMENT
5.1 PROCEDURES FOR UPDATING THE FIRMWARE

1. Purpose
After replacing the DVD MT PCB Assy, be sure to update the firmware to the latest version. The firmware of the Assy for service may not be the latest.

2. Procedures for creating the disc for updating
Necessary tools:
① PC with a CD-R/CD-RW drive
② Blank CD-R or CD-RW
③ Firmware file (*****.BIN)

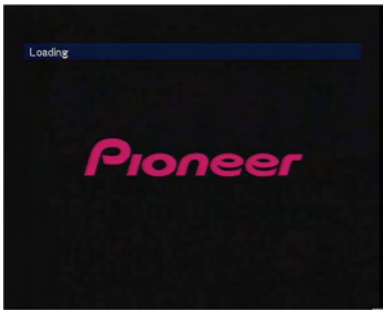
How to create:
① Start up the program for writing to CD.
② Load a blank disc in the CD-R/CD-RW drive.
③ Enter "PIONEER" as the volume label.
④ Select the .BIN file.
⑤ Write the latest version of the firmware in ISO 9660 format.

3. Procedures for updating the firmware
How to update:
① Turn on the main unit and open the disc tray.
② Place the disc for updating in the disc tray and close the tray.
③ Press the PLAY button.



While the screen shown at left is being displayed, updating is in progress.
DO NOT TURN OFF THE POWER DURING UPDATING.

④ Updating of the firmware is completed.



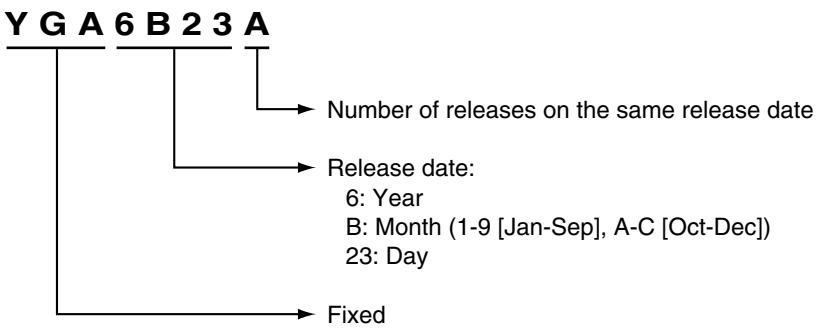
When the screen with the Pioneer logo is displayed, updating is completed.
The time required for updating is about 5 minutes.

4. How to confirm the version of the firmware

Press the ESC then the CHAP key on the remote control unit for servicing. The version of the firmware is labeled ROM NUMBER. Check if the version is the latest one.

	AREA:WY	REGION:2
ROM NUMBER	YGA6B23A	
REG CHK	40	
SUM CHK	02A5	
FL VERSION	1.16	
CHIP VERSION	1389FE	

How to interpret the version code:



5. Troubleshooting

① If updating of the firmware failed
If the main unit was turned off during updating, it cannot initialize and start up again properly. In such a case, replace the flash ROM on the DVD MT PCB Assy.

② If updating of the firmware using the disc for updating failed
- Was the disc for updating recognized properly?
  Check if the volume label of the disc is PIONEER.
- Is playback of a disc other than the disc for updating possible?
  If playback of a test CD is also impossible, a reading section, such as PU, may be defective. In such a case, repair the defective part first.
  If playback of a test CD is possible, the disc for updating may be defective. Check for any scratches or foreign matter, such as fingerprints, on the reading surface.
  If no problem is found with the disc, create a new disc for updating again.

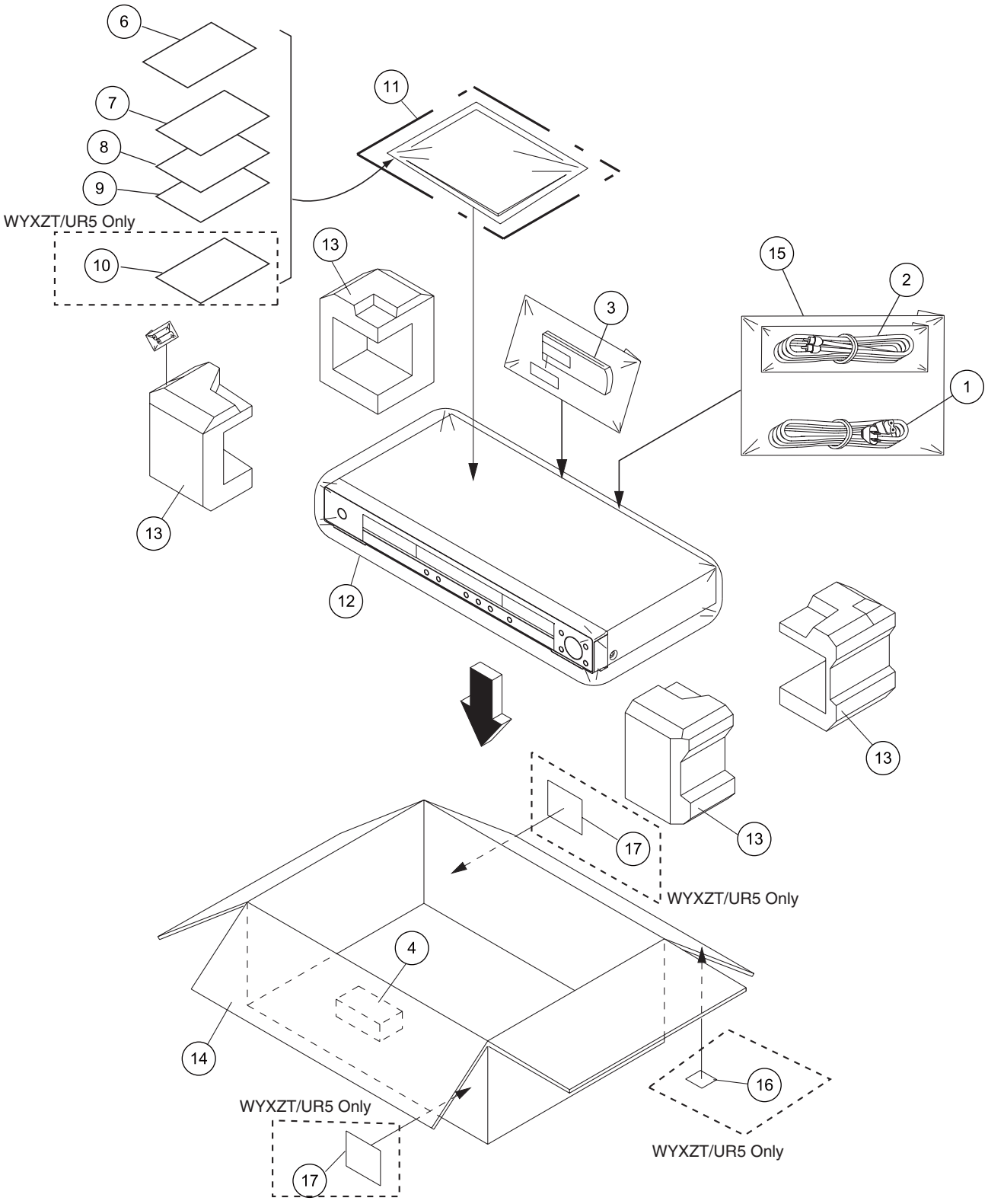
5.2 ADJUSTMENT

There is no information to be shown in this chapter.

6. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

6.1 PACKING SECTION



PACKING SECTION parts List

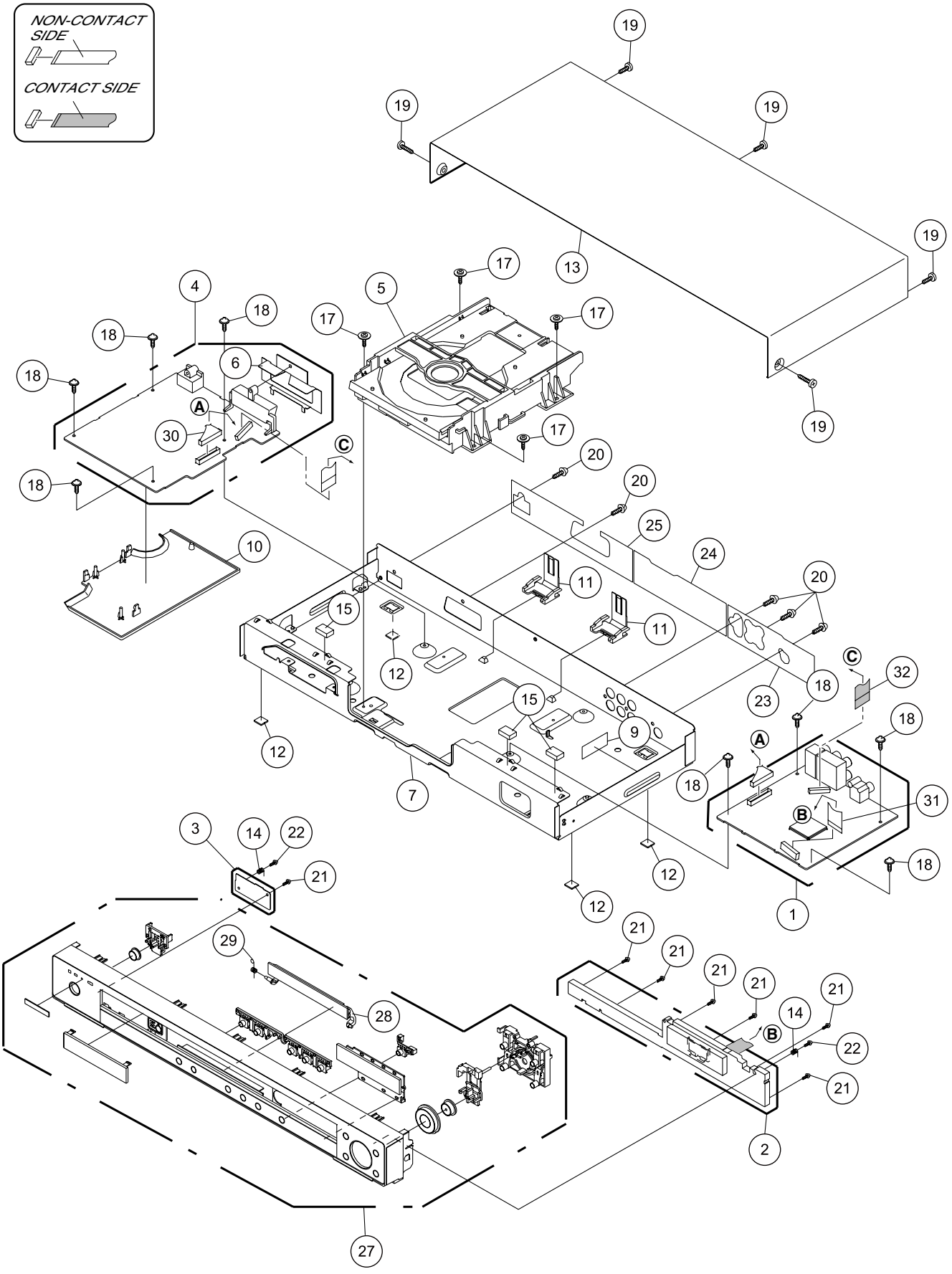
Mark	No.	Description	Part No.
⚠	1	Power Cable	1206158802
	2	Audio/Video Cable	06CPBA2006
	3	Remote Control	07650KY070
	4	Package Pad	792WHAA237
	5	••••••	
NSP	6	Warranty Card	J2K00102A
	7	Operating Instructions (E/I)	See Contrast table (2)
	8	Operating Instructions (G/F)	See Contrast table (2)
	9	Operating Instructions (S/D)	See Contrast table (2)
	10	Operating Instructions (R)	See Contrast table (2)
	11	Polyethylene Bag,Instruction	See Contrast table (2)
	12	Gift Sheet	791WHAA183
	13	Package	792WHAA227
	14	Gift Box	See Contrast table (2)
	15	Polyethylene Bag,INSTA5	791WHAA040
	16	Label Safety	See Contrast table (2)
	17	Caution Label	See Contrast table (2)

(2) CONTRAST TABLE

DV-300-S/WYXZT5, /WYXZT/UR5, DV-300-K/WYXZT5 and WYXZT/UR5 types are constructed the same except for the following :

Mark	No.	Symbol and Description	DV-300-S/ WYXZT5	DV-300-S/ WYXZT/UR5	DV-300-K/ WYXZT5	DV-300-K/ WYXZT/UR5
	7	Operating Instructions (English, Italian)	J2K00121B	Not used	J2K00121B	Not used
	8	Operating Instructions (German, French)	J2K00122B	Not used	J2K00122B	Not used
	9	Operating Instructions (Spanish, Duch)	J2K00123B	Not used	J2K00123B	Not used
	10	Operating Instructions (Russian)	Not used	J2K00601A	Not used	J2K00601A
	11	Polyethylene Bag,Instruction	JB5KD400	JB5KD200	JB5KD400	JB5KD200
	14	Gift Box	793WCDD396	793WCDD396	793WCDD443	793WCDD443
NSP	16	Label Safety	Not used	723000D306	Not used	723000D306
	17	Carton Label	Not used	723000D534	Not used	723000D533

6.2 EXTERIOR SECTION



EXTERIOR SECTION parts List

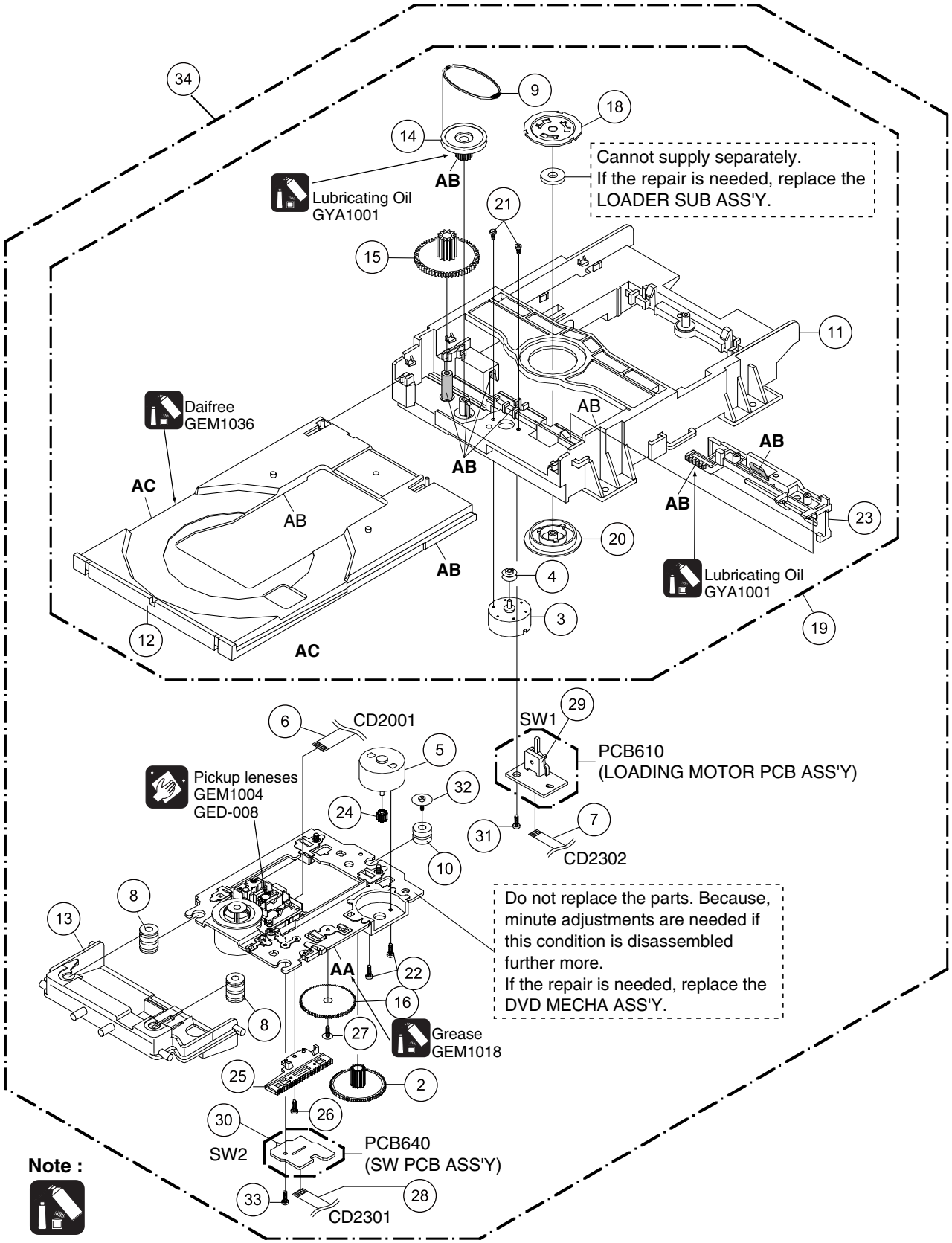
Mark	No.	Description	Part No.
	1	DVD MT PCB Assy	A2K001A130
	2	OPERATION 1 PCB Assy	See Contrast table (2)
	3	OPERATION 2 PCB Assy	A2K001A280
⚠	4	POWER PCB Assy	A2K001A240
	5	DVD MECHA ASSY	A2K001A650
	6	Shield,21Pin	761WSA0237
NSP	7	Plate,Bottom	702WSAA194
	8	••••••	
NSP	9	Sheet,Caution	726000A140
	10	Plate,Cover power	755WPAA031
	11	Holder,FFC	761WPA0396
	12	Cushion,Leg	VEB1349
	13	Cabinet,Top	See Contrast table (2)
	14	Spring Earth	743WKAA015
	15	Cushion (15x20x16)	8965TS101B
	16	••••••	
	17	Screw,Tap Tite(S)-Bind Wash.	816423063U
	18	Screw,Tap Tite(S) (3x5.5)	8107D3055U
	19	Screw,Tap Tite(B) (3x6.0)	See Contrast table (2)
	20	Screw,Tap Tite(B)Pan (3x6)	810913060U
	21	Screw,Tap Tite(P) (2.6x8)	811022680U
	22	Screw,Tap Tite(P) Bind WH7	8110I2680U
NSP	23	Sheet,Jack 1	722631A173
NSP	24	Sheet,Jack 2	See Contrast table (2)
NSP	25	Sheet,Jack 3	See Contrast table (2)
	26	••••••	
	27	Front Cabi Assy	See Contrast table (2)
	28	Flap, DVD	712WPDA079
	29	Spring, Flap-DVD	743WKA0052
	30	Cord Connector (CD502)	06CU2E3301
	31	Cord Jumper (CD601)	122H0B1003
	32	Cord Jumper (CD7301)	122H0C3002

(2) CONTRAST TABLE

DV-300-S/WYXZT5, /WYXZT/UR5, DV-300-K/WYXZT5 and /WYXZT/UR5 types are constructed the same except for the following :

Mark	No.	Symbol and Description	DV-300-S/ WYXZT5	DV-3003-S/ WYXZT/UR5	DV-300-K/ WYXZT5	DV-300-K/ WYXZT/UR5
	2	OPERATION 1 PCB Assy	A2K001A270	A2K006A270	A2K001A270	A2K006A270
	13	Cabinet, Top	702WSB0114	702WSB0114	702WSB0115	702WSB0115
	19	Screw,Tap Tite(B) (3x6.0)	8109K3060U	8109K3060U	8109K3060S	8109K3060S
NSP	24	Sheet, Jack 2	722631A172	722631A172	722631A197	722631A197
NSP	25	Sheet, Jack 3	722631A174	722631A196	722631A198	722631A201
	27	Front Cabi Assy	7A701A878A	7A701A878A	7A701A907A	7A701A907A

6.3 06 DVD MECHA SECTION



Note :

CLASS	PART NO.	MARK
GREASE	GEM1018	**AA**
	GYA1001	**AB**
	GEM1036	**AC**

NOTE: Applying positions AA, AB and AC for the grease are displayed for this section. Check if the correct grease is applied for each position.

06 DVD MECHA SECTION parts List

Mark	No.	Description	Part No.
	1	••••••	
	2	Gear,Middle	92P100117A
	3	Loading Motor	1515S98004
	4	Pulley,Motor	92P100097A
	5	FEED Motor	1515S98004
	6	Cord Jumper (24P)(CD2001)	122J4O2202
	7	Cord Jumper (CD2302)	122H051602
	8	Insulator (F)	92P200013A
	9	Belt,Loading	92P200015A
	10	Insulator (R)	92P200016A
	11	Frame,main	92P100119A
	12	Tray (R)	92P100151A
	13	Holder ,Traverse	92P100125A
	14	Gear,Pulley	92P100123A
	15	Gear,Main	92P100124A
	16	Gear,Feed	92P100116A
	17	••••••	
	18	Plate, Clamper	92P000023A
	19	LOADER SUB ASSY (R)	92AAA0024A
	20	Clamper	92P100122A
	21	Screw,Pan (M1.7x3 P3)	814011730U
	22	Screw,Pan (M1.7x2.3 P3)	814011723U
	23	Rack,Loading	92P100121A
	24	Gear,Motor	92P100088A
	25	Feed Rack Assy	92AAA0017A
	26	Screw,T-Tite(B) (M1.7x5.0 P3)	813381750U
	27	Screw,Gear Feed	92P700007A
	28	Cord Jumper (CD2301)	122H061605
	29	Switch (SW1)	0515S32003
	30	Push Switch (SW2)	0500101036
	31	Screw,Tap Tite(P) (2.6x8)	811022680U
	32	Sems.Tap Tite(P) (2x8)	816112080U
	33	Screw (Bind 2x8)	811022080U
	34	DVD MECHA ASSY	A2K001A650

7. SPECIFICATIONS

7.1 DISC/CONTENT FORMAT PLAYBACK COMPATIBILITY

Disc / content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable formatósee below for further compatibility information.

Please also note that recordable discs cannot be recorded using this player.

DVD-Video DVD-R DVD-RW

Audio CD Video CD CD-R CD-RW

Fujicolor CD

- This unit will play DVD+R/+RW discs.
- DVD is a trademark of DVD Format/Logo Licensing Corporation.
- is a trademark of Fuji Photo Film Co. Ltd.
- Also compatible with KODAK Picture CD

This player supports the IECís Super VCD standard. Compared to the Video CD standard, Super VCD offers superior picture quality, and allows two stereo soundtracks to be recorded. Super VCD also supports the widescreen size.

Super VCD

About DualDisc playback

A DualDisc is a new two -sided disc, one side of which contains DVD content video, audio, etc. while the other side contains non-DVD content such as digital audio material.

The non-DVD, audio side of the disc is not compliant with the CD Audio specification and therefore may not play.

The DVD side of a DualDisc plays in this product.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

CD-R/RW compatibility

- Compatible formats: CD-Audio, Video CD/ Super VCD, ISO 9660 CD-ROM* containing MP3, WMA, JPEG or DivX video files
  * ISO 9660 Level 1 or 2 compliant. CD physical format: Mode1, Mode2 XA Form1. Romeo and Joliet file systems are both compatible with this player.
- Multi-session playback: No
- Unfinalized disc playback: No
- File structure (may differ): Up to 299 folders on a disc; up to 648 folders and files (combined) within each folder

DVD+R/DVD+RW compatibility

Only DVD+R/DVD+RW discs recorded in ëVideo Mode (DVD Video Mode)í which have been finalized, can be played back. However, some editing made during the recording may not be played back accurately.

DVD-R/RW compatibility

- Compatible formats: DVD-Video, Video Recording (VR)*
  * Edit points may not play exactly as edited; screen may go momentarily blank at edited points.
- Unfinalized playback: No
- WMA/MP3/JPEG file playback on DVD-R/ RW: No

Compressed audio compatibility

- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA)
- Sampling rates: 32 kHz, 44.1 kHz or 48 kHz
- Bit-rates: Any (128 Kbps or higher recommended)
- VBR (variable bit rate) MP3 playback: No
- VBR WMA playback: No
- WMA lossless encoding compatible: No
- DRM (Digital Rights Management) compatible: Yes (DRM-protected audio files will not play in this player.)
- File extensions: .mp3, .wma (these must be used for the player to recognize MP3 and WMA files – do not use for other file types)

WMA (Windows Media™ Audio) compatibility

This player can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation. WMA content can be encoded by using Windows Media Player for Windows XP, Windows Media Player 9 or Windows Media Player 10 series.

Windows Media is trademark of Microsoft Corporation.

This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from Microsoft Licensing, Inc.

DivX video compatibility

- Official DivX® Certified product.
- Plays all versions of DivX® video (including DivX® 6) with standard playback of DivX® media files.
- File extensions: .avi and .divx (these must be used for the player to recognize DivX video files). Note that all files with the .avi extension are recognized as MPEG4, but not all of these are necessarily DivX video files and therefore may not be playable on this player.

DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license.

JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.2* still image files up to a resolution of 3072 x 2048.
  * File format used by digital still cameras.
- Progressive JPEG compatible: No
- File extensions: .jpg (must be used for the player to recognize JPEG files – do not use for other file types)

PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

Discs recorded in packet write mode (UDF format) are not compatible with this player.

Check the DVD-R/RW or CD-R/RW software disc boxes for additional compatibility information.

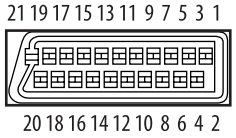
7.2 MAIN SPECIFICATIONS

General

Power requirements
. . . . . AC 220 V to 240 V, 50 Hz/60 Hz
Power consumption . . . . . 7 W
Power consumption (standby) . . . . . 0.7 W
Weight . . . . . 1.7 kg
Dimensions:
. . . . . 420 (W) x 49.5 (H) x 215 (D) mm
Operating temperature . . . . . +5°C to +35°C
Operating humidity . . . . . 5% to 85%
(no condensation)

AV connector output

AV Connector (21-pin connector assignment)
AV connector output . . . . . 21-pin connector
This connector provides the video and audio signals for connection to a compatible colour TV or monitor.



PIN no.
1 . . . . . Audio 2/R out
3 . . . . . Audio 1/L out
4 . . . . . GND
7 . . . . . B out
8 . . . . . Status
11 . . . . . G out
15 . . . . . R out
17 . . . . . GND
19 . . . . . Video out
21 . . . . . GND

Component video output

Output level. . . . . .Y (luminance): 1 Vp-p (75 Ω)
P_B (color): 0.7 Vp-p (75 Ω)
P_R (color): 0.7 Vp-p (75 Ω)
Jacks . . . . . RCA

Video output

Output level . . . . . 1 Vp-p (75Ω)
Jack . . . . . RCA

Audio output (1 stereo pair)

Output level . . . . . During audio output
200 mVrms (1 kHz, –20 dB)
Number of channels 2
Jacks . . . . . RCA

Digital audio characteristics

Frequency response . . . . . 4 Hz to 44 kHz
(DVD fs: 96 kHz)

S/N ratio . . . . . 115 dB
Dynamic range . . . . . 88 dB
Total harmonic distortion . . . . . 0.0065 %
Wow and flutter . . . . . Limit of measurement
(±0.001% W. PEAK) or lower

Digital output

Coaxial digital output . . . . . RCA jack

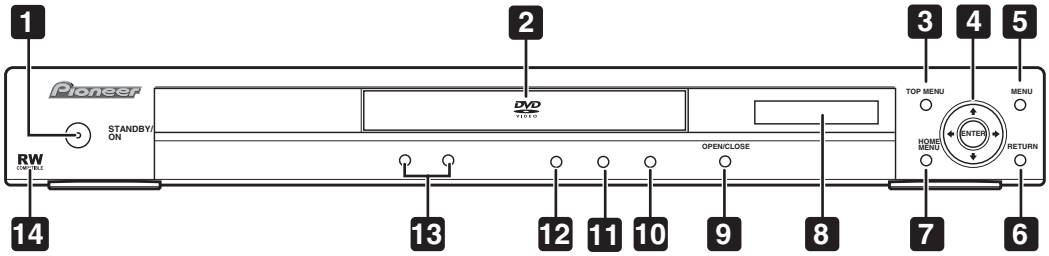
Accessories

Audio/video cable (red/white/yellow plugs). 1
Power cable. 1
Remote control. 1
AA/R6P dry cell batteries 2
Warranty card. 1
Operating Instructions

The specifications and design of this product are subject to change without notice, due to improvement.

7.3 FRONT PANEL SECTION

Front panel



1 ⏻ STANDBY/ON
Press to switch the player on or into standby.

2 Disc tray

3 TOP MENU
Displays the 'top menu' of a DVD disc—this varies with the disc.

4 ENTER & cursor buttons
Selects the current menu option.

5 MENU
Displays a DVD disc menu—this varies with the disc and may be the same as the 'top menu'.

6 RETURN
Returns to the previously dis-played menu screen.

7 HOME MENU

8 Display
Description of the display.

9 ⏏ OPEN/CLOSE
Press to open or close the disc tray.

10 ►
Press to start or resume playback.

11 ❚❚
Press to pause playback. Press again to restart.

12 ■
Press to stop the disc (you can resume play-back by pressing ► (play)).

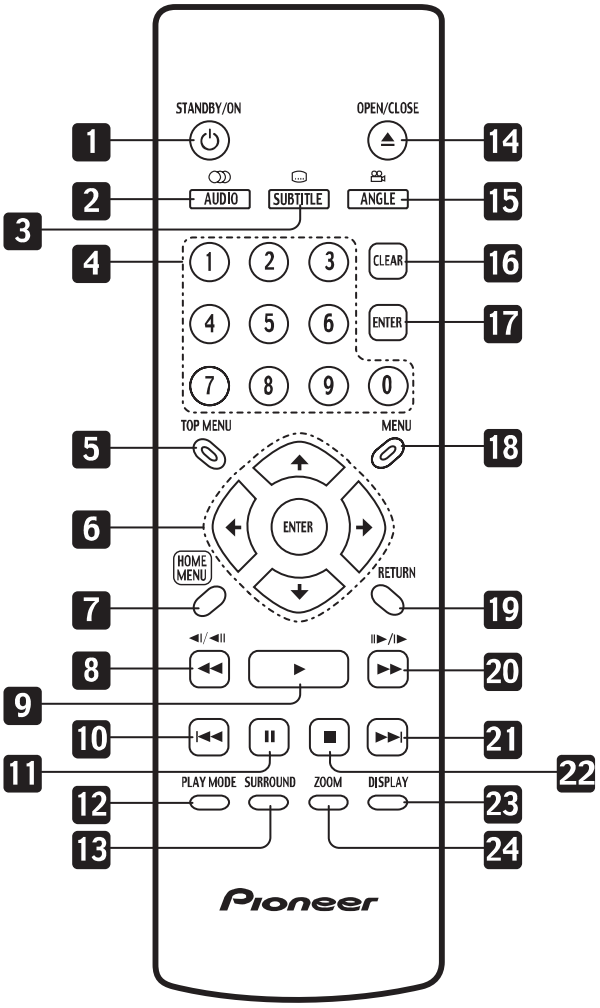
13 I◄◄ and ►►I
- Press and hold for fast reverse/forward scanning.
- Press to jump to the previous/next chapter or track.

15 RW COMPATIBLE Compatible

This mark indicates compatibility with DVD-RW discs recorded on a DVD recorder in Video Recording mode.

7.4 REMOTE CONTROL

Remote control



1 ⏻ STANDBY/ON

Press to switch the player on or into standby.

2 AUDIO

Press to select the audio channel or language.

3 SUBTITLE

Press to select a subtitle display.

4 Number buttons

5 TOP MENU

Press to display the top menu of a DVD disc.

6 ENTER & cursor buttons

Use to navigate on-screen displays and menus. Press **ENTER** to select an option or execute a command.

7 HOME MENU

Press to display (or exit) the on-screen display.

8 ◄◄ and ◄I/◄II

Use for reverse slow motion playback, frame reverse and reverse scanning.

9 ►

Press to start or resume playback.

10 I◄◄

chapter or track, then to previous chapters/ tracks.

11 II

Press to pause playback; press again to restart.

12 PLAY MODE

Press to display the Play Mode menu. (You can also get to the Play Mode menu by pressing **HOME MENU** and selecting Play Mode).

Press to jump to the beginning of the current

Remote control 2

13 SURROUND
Press to activate/switch off DD V/SRS TruSurround.

14 ⏏ OPEN/CLOSE
Press to open or close the disc tray.

15 ANGLE
Press to change the camera angle during DVD multi-angle scene playback.

16 CLEAR
Press to clear a numeric entry.

17 ENTER
Use to select menu options, etc.

18 MENU
Press to display a DVD disc menu, or the Disc Navigator if a VR format DVD-RW, CD, Video CD , MP3, WMA or JPEG disc is loaded.

19 RETURN
Press to return to a previous menu screen.

20 ►► and I►/II►
Use for forward slow motion playback, frame advance and forward scanning.

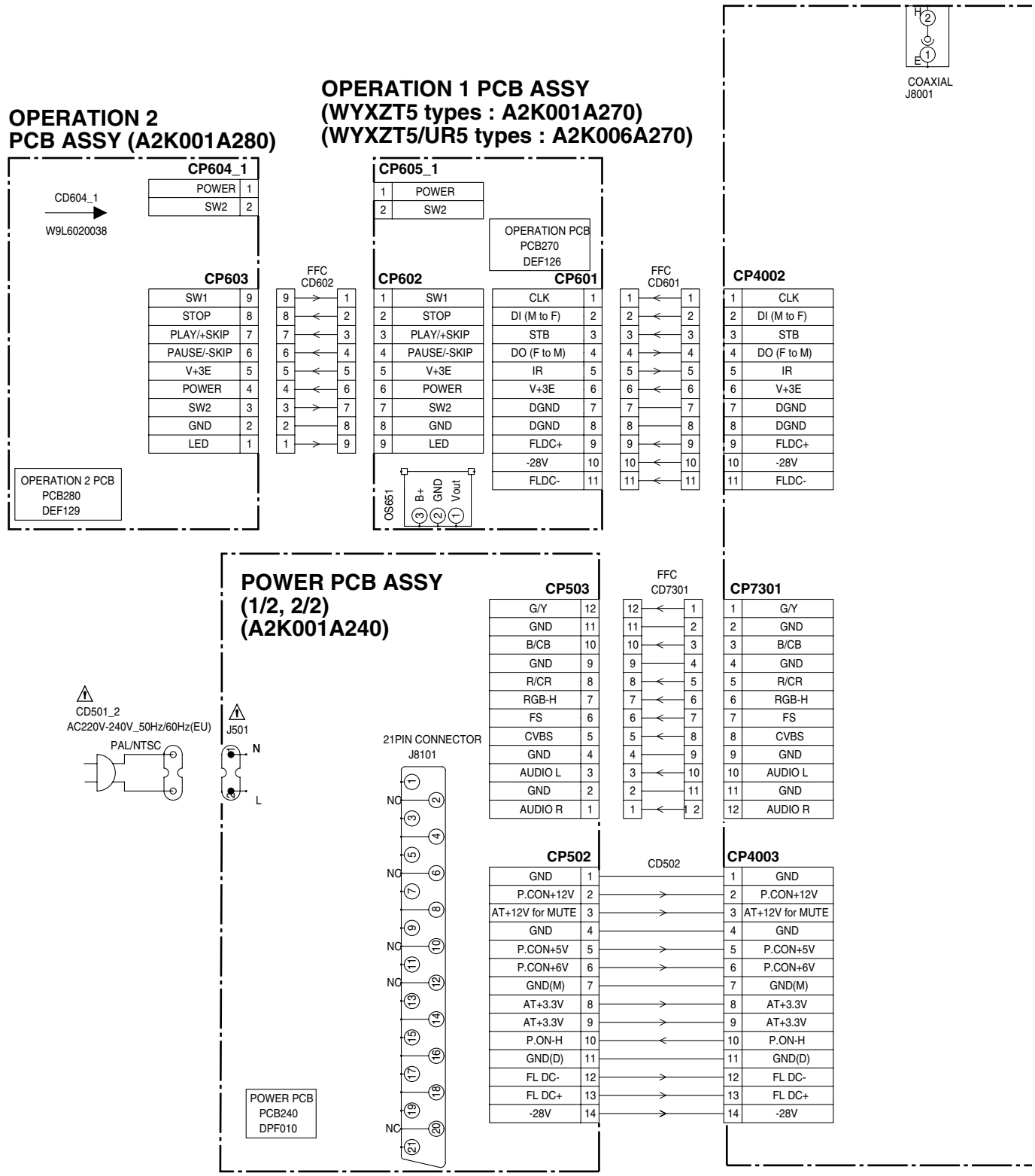
21 ►►I
Press to jump to the next chapter or track.

22 ■
Press to stop the disc (you can resume playback by pressing ►(play)).

23 DISPLAY
Press to display information about the disc playing.

24 ZOOM
Press to change the zoom level.

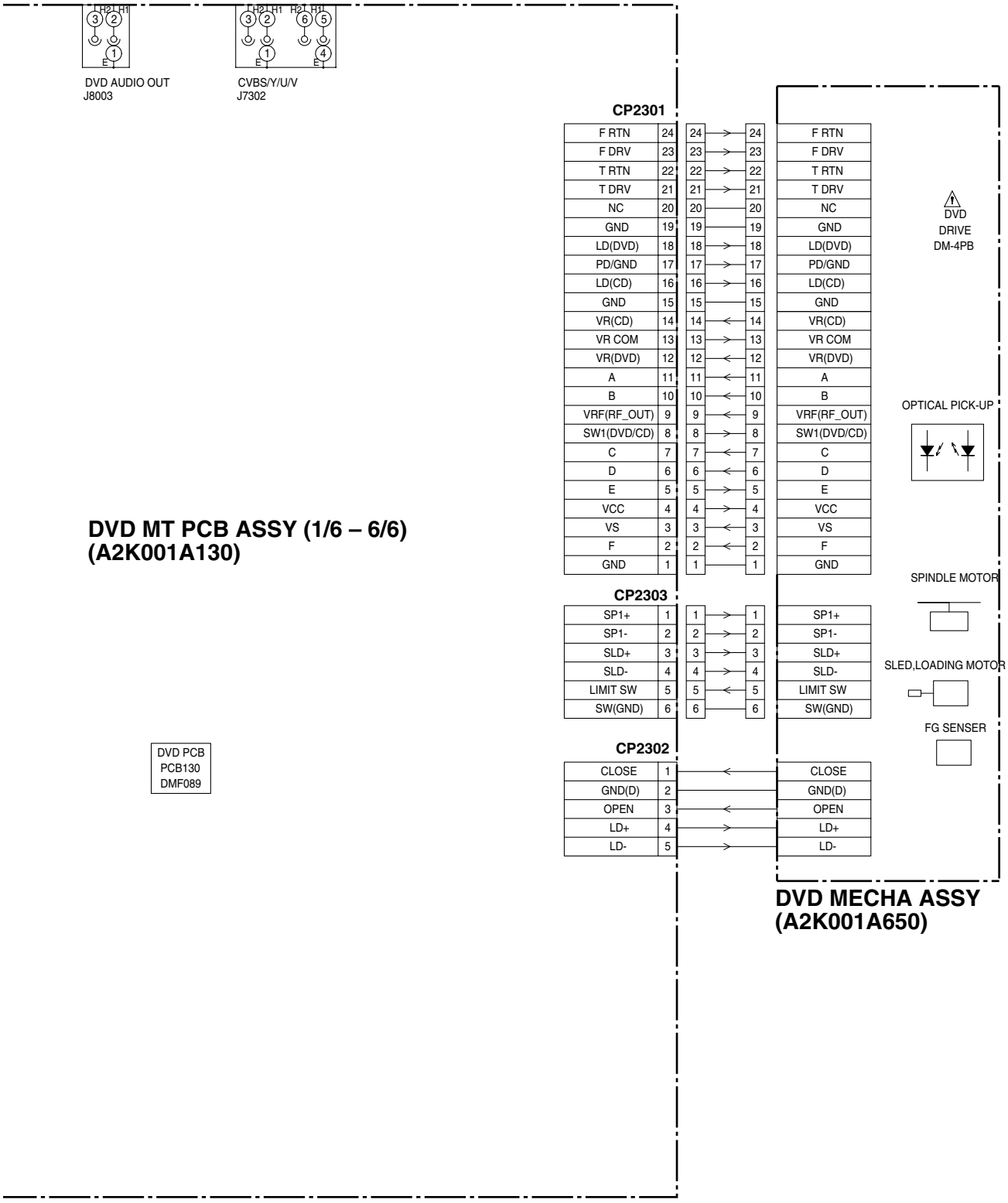
8. SCHEMATIC DIAGRAM
8.1 OVERALL WIRING CONNECTION DIAGRAM



CAUTION :SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

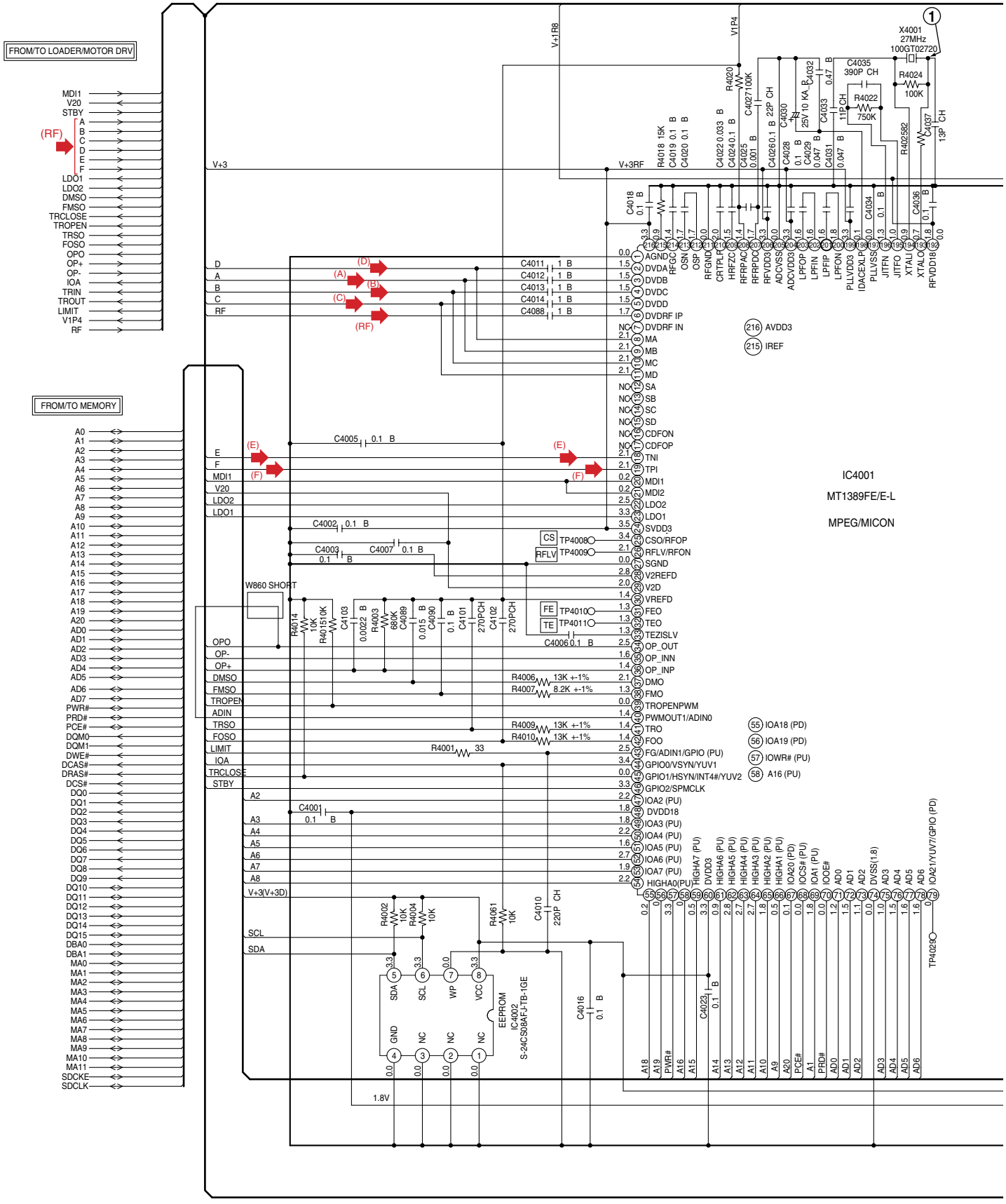
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- : The power supply is shown with the marked box.

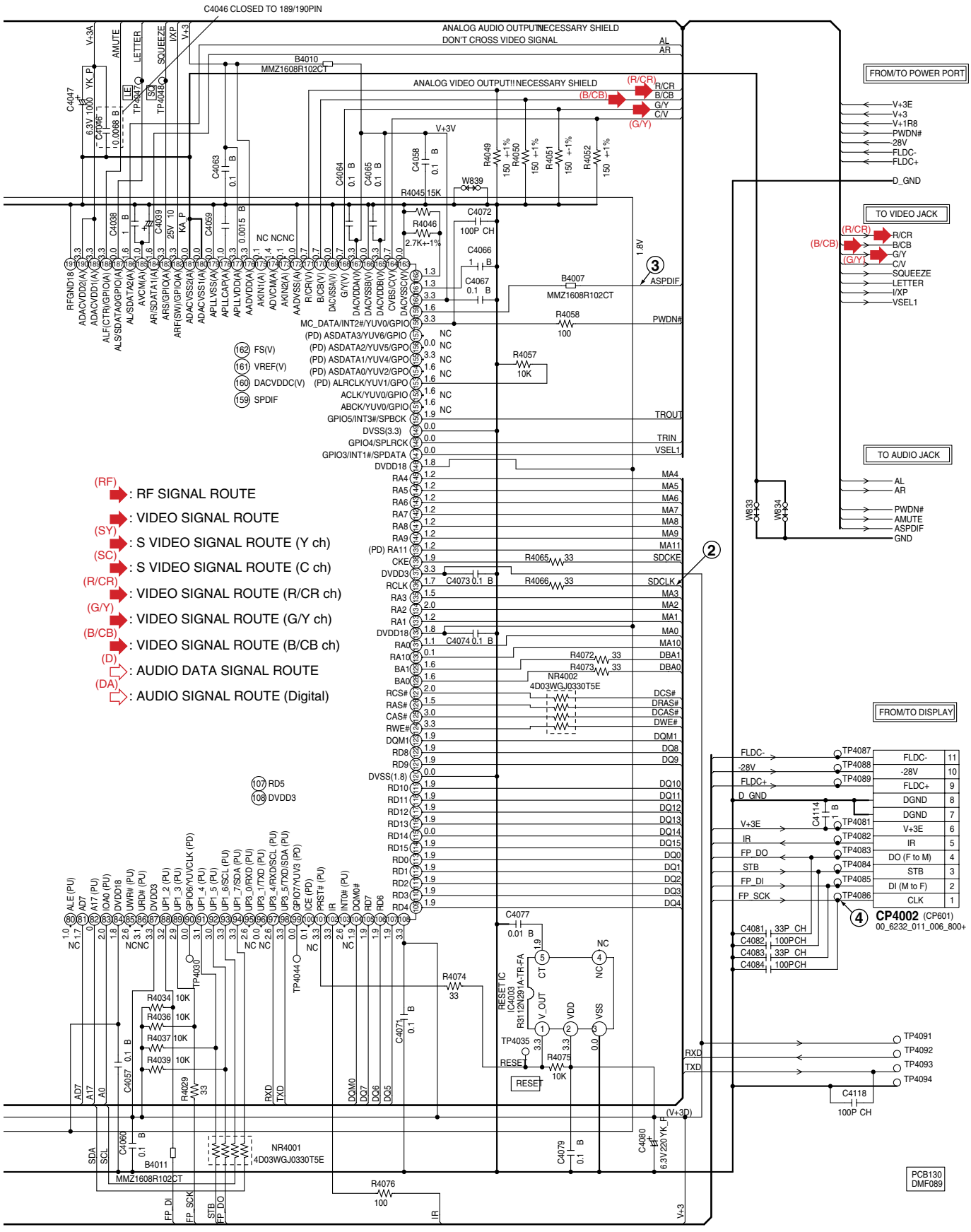


NOTE:THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

8.2 DVD MT PCB ASSY (1/6)

DVD MT PCB ASSY (1/6) (A2K001A130)

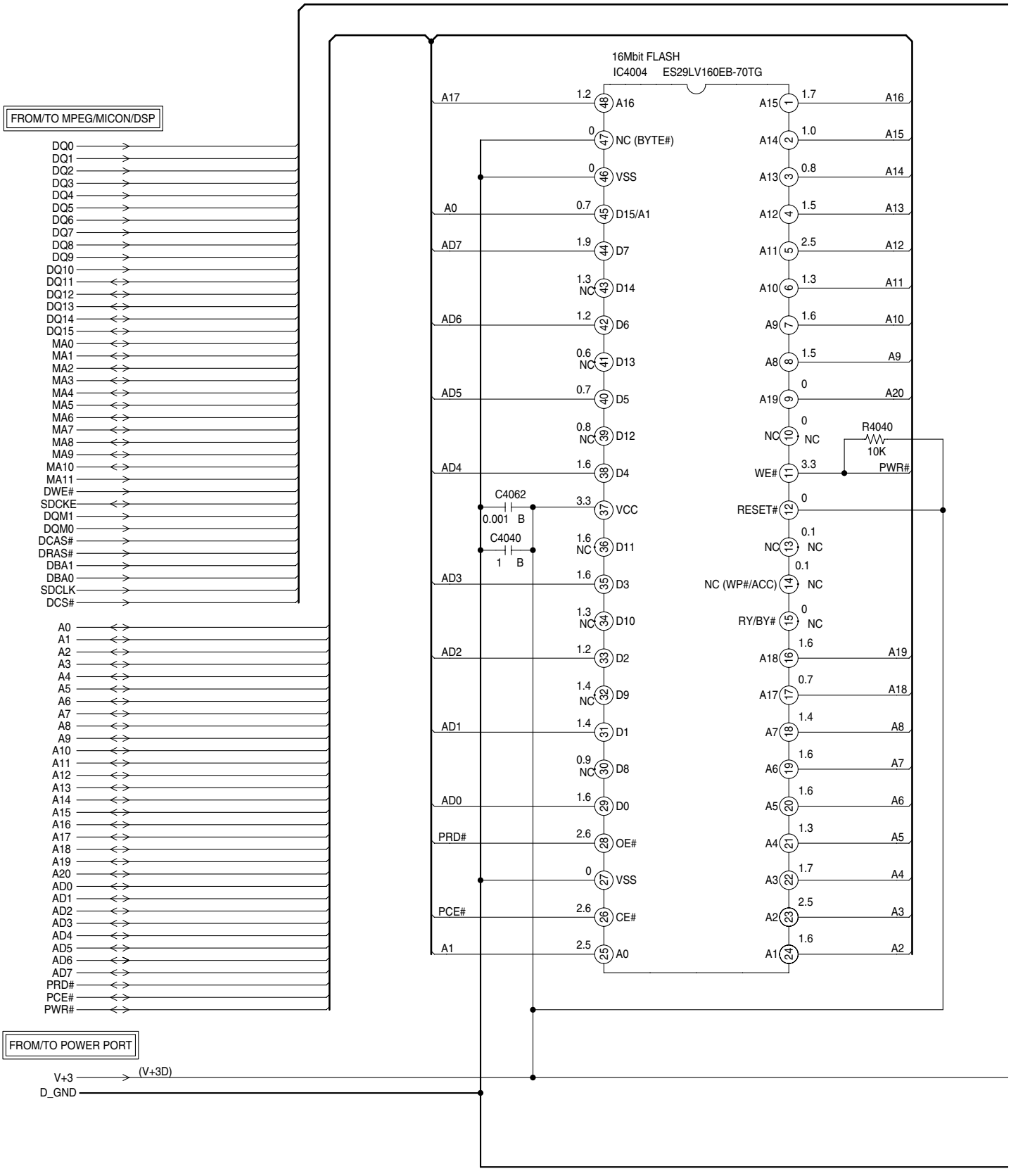




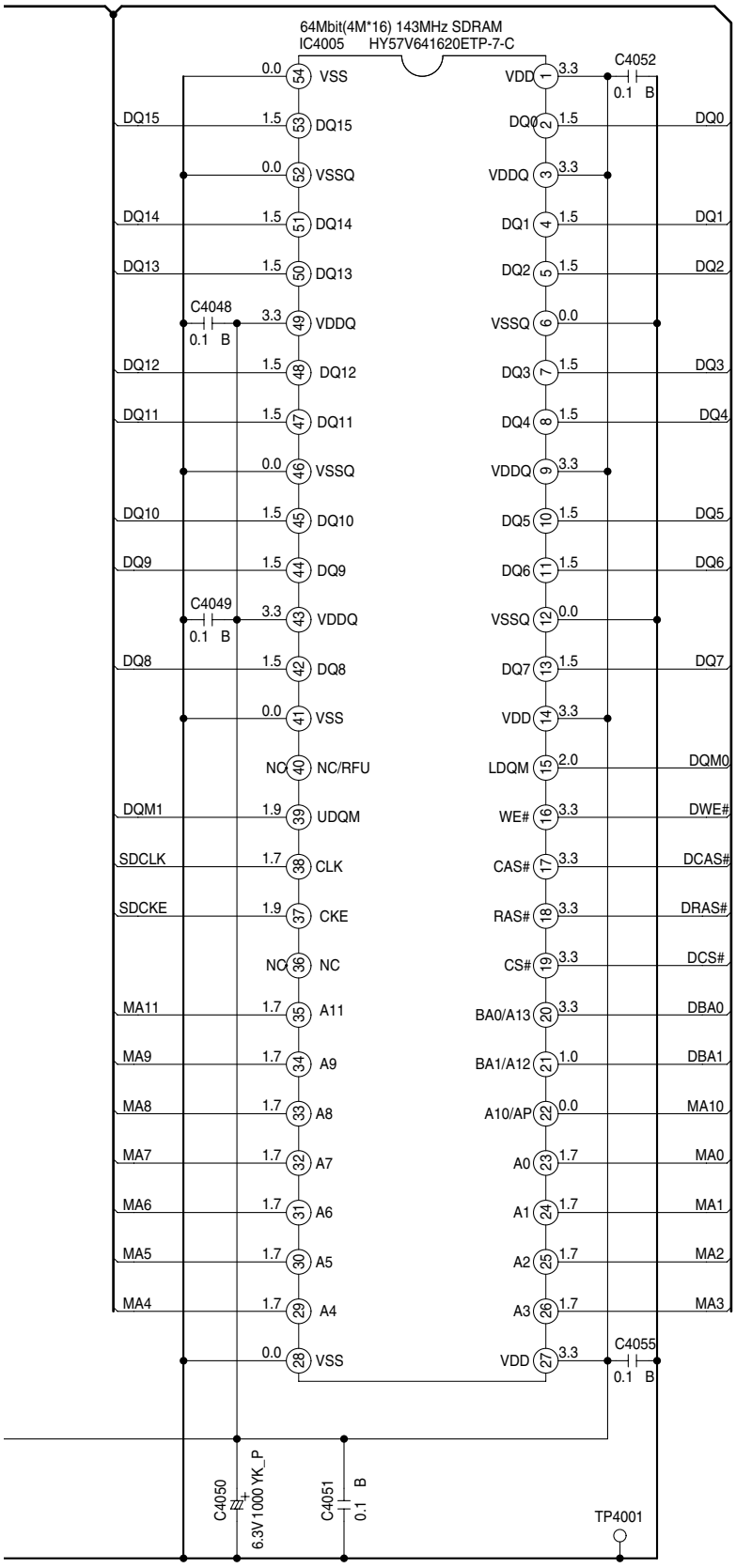
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

8.3 DVD MT PCB ASSY(2/6)

DVD MT PCB ASSY (2/6) (A2K001A130)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

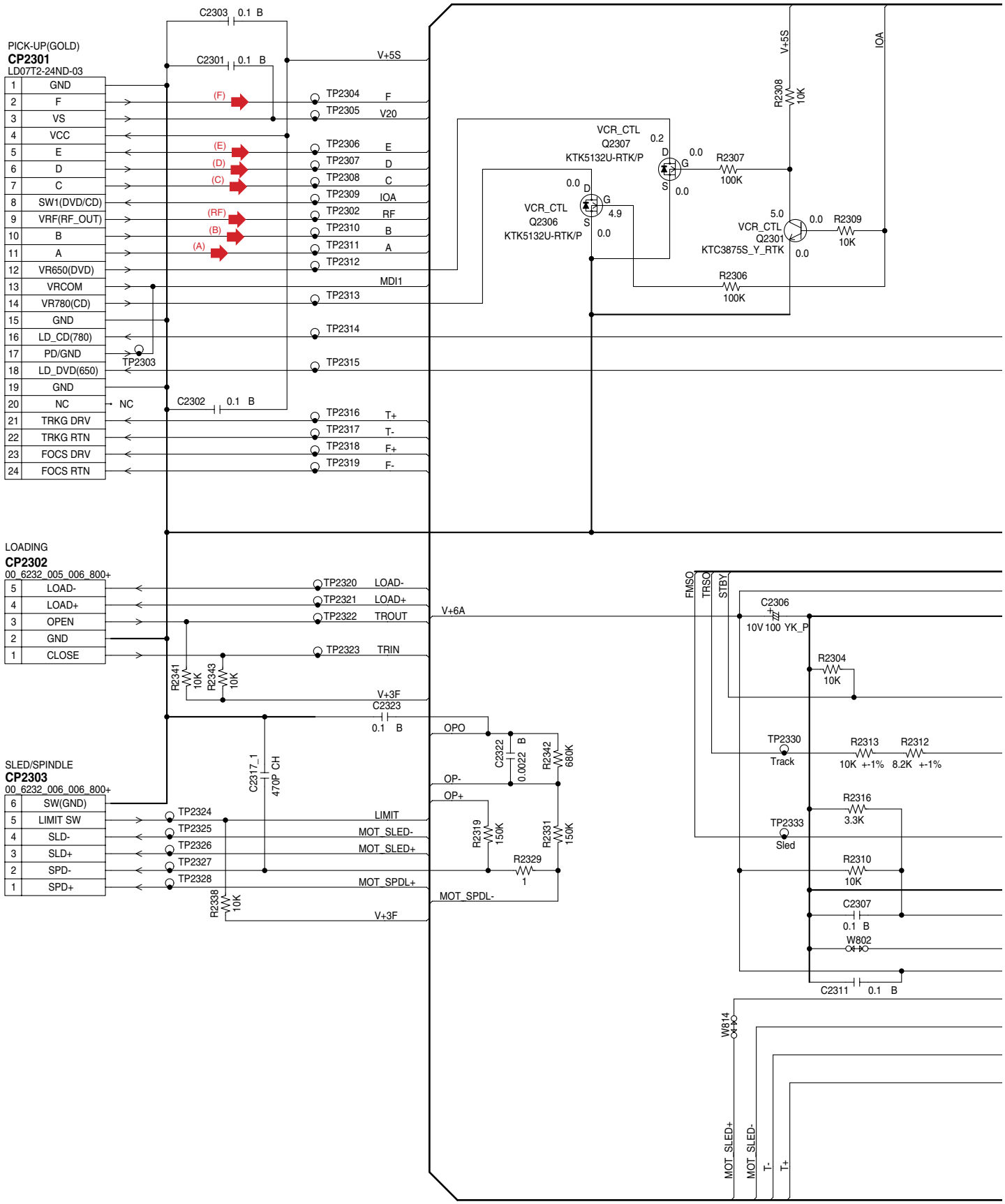


NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB130
DMF089

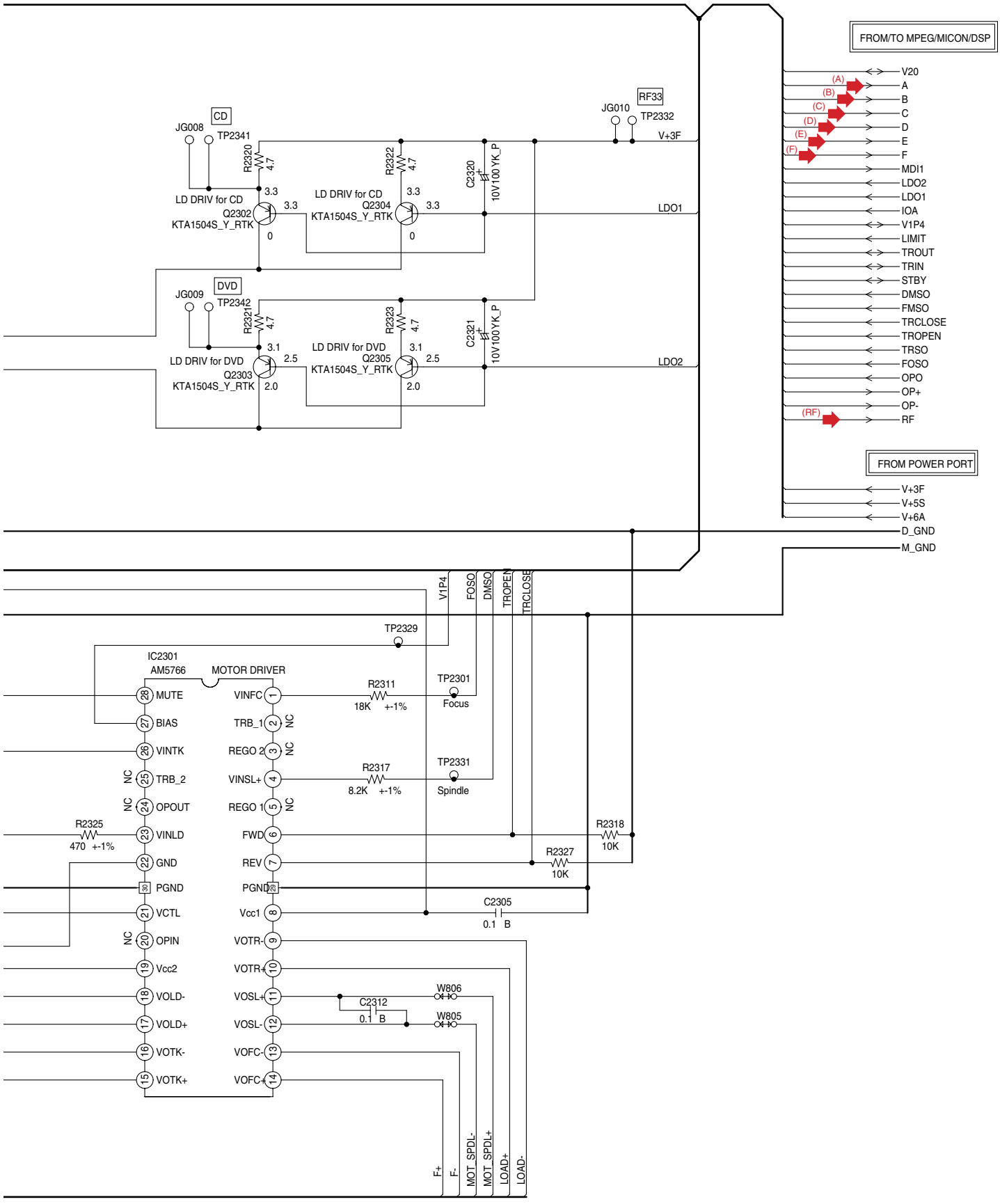
8.4 DVD MT PCB ASSY(3/6)

DVD MT PCB ASSY (3/6) (A2K001A130)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

(RF) : RF SIGNAL ROUTE

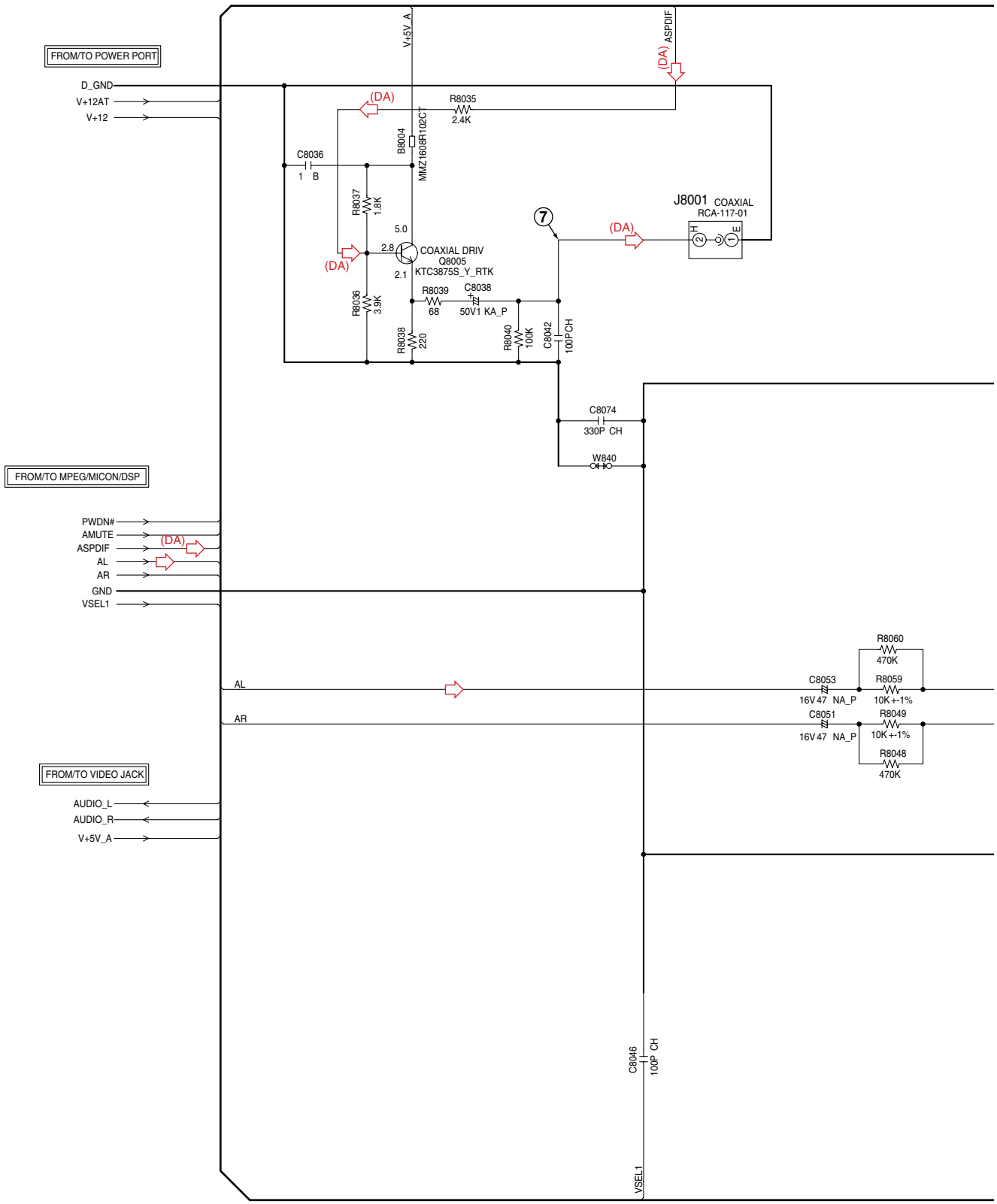


NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

PCB130
DMF089

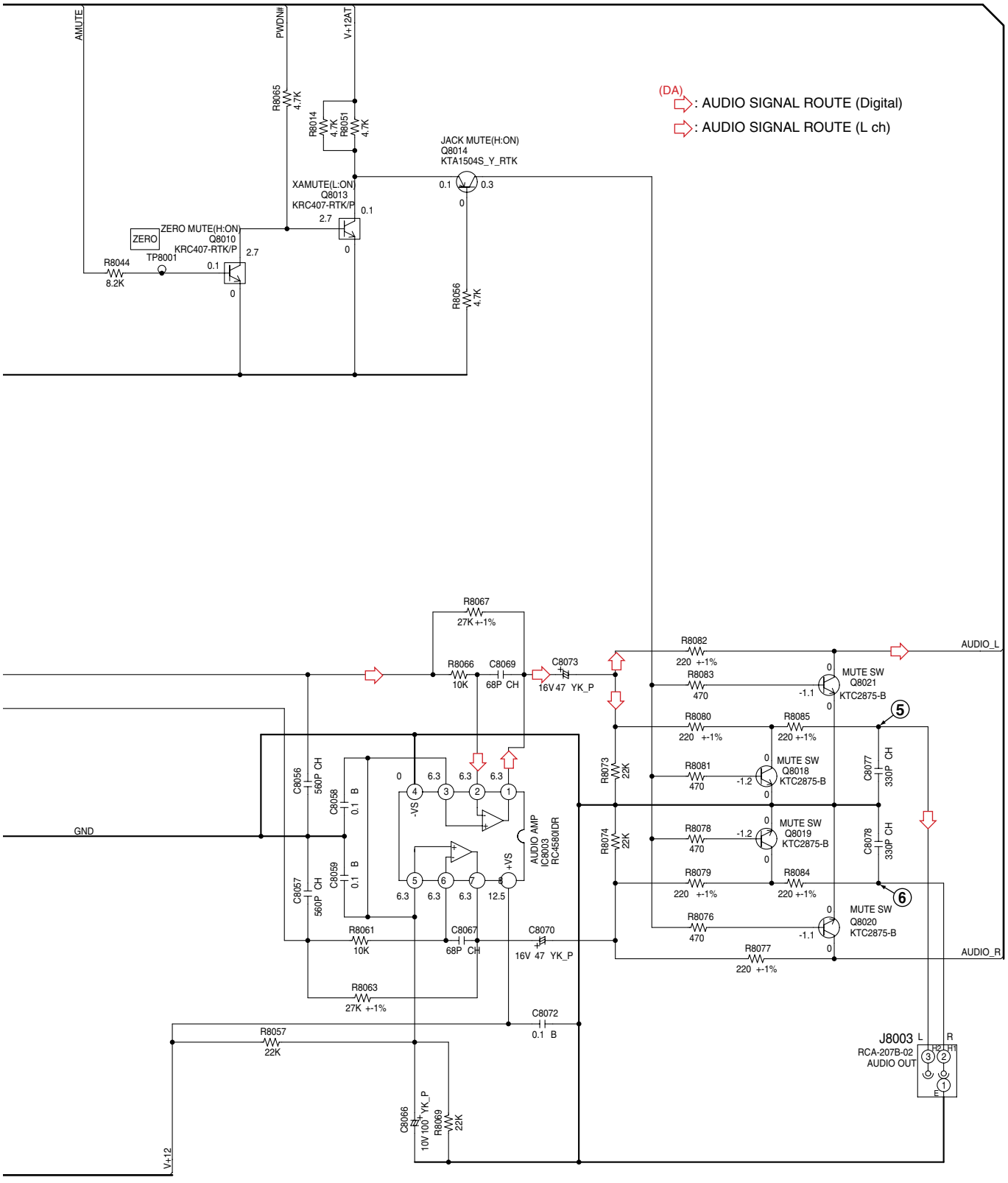
8.5 DVD MT PCB ASSY(4/6)

DVD MT PCB ASSY (4/6) (A2K001A130)

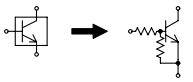


NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

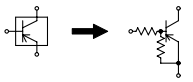
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。



CAUTION: DIGITAL TRANSISTOR

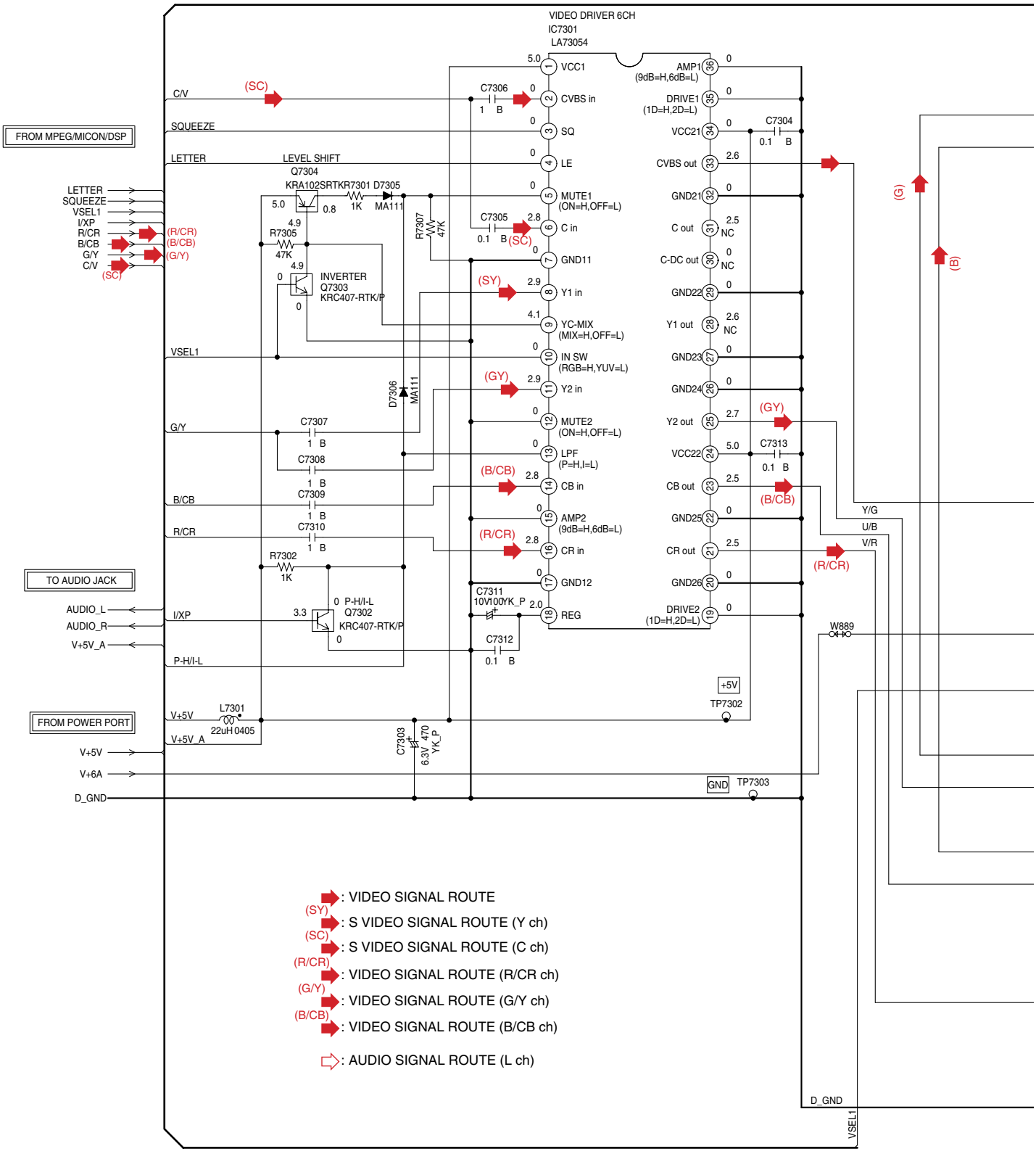


CAUTION: DIGITAL TRANSISTOR



8.6 DVD MT PCB ASSY(5/6)

DVD MT PCB ASSY (5/6) (A2K001A130)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

SCART ON ---> B7301,B7302 ON
D ON ---> W867,B7303 ON

FROM POWER

VIDEO/AUDIO for 21PIN
CP7301 (CP503)
IMSA-9604S-12C

G	1
GND	2
B	3
GND	4
R	5
RGB-H	6
FS	7
CVBS	8
GND	9
AUDIO L	10
GND	11
AUDIO R	12

G/Y_OUT
B/U_OUT
R/V_OUT
P-H/I-L_RGB-H
ASP/FS

B7301 SQUEEZE MMZ1608R102CT
B7302 VSEL1 MMZ1608R102CT
AUDIO_R
AUDIO_L

(G) (B) (R)

CVBS OUT

IC7302 4CH BUS SW
SN74CBT3257PWR

S VCC 5.0
1B1 /OE 0
1B2 4B1 NC
1A 4B2 NC
2B1 4A NC
2B2 3B1 1.3
2A 3B2 2.4
GND 3A 2.4

C7315 0.001 B

(G) (GY) (B) (B/CB) (R/CR) (R) (R/CR)

D7307 D7308 D7309 MA111
D7310 D7311 D7312 MA111

U_OUT V_OUT Y_OUT

C7316 C7317 C7318 C7319 6.3V 470 YK_P 6.3V 1000 YK_P

B7304 B7305 MMZ1608R102CT

R7315 R7316 R7317 R7318 75 +-1%
R7319 R7320 1.2K
R7321 1.2K

10 11 8 9

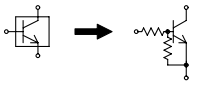
U V CVBS Y

H2 H1 H2 H1
3 2 6 5
1 4

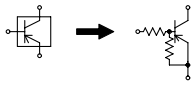
J7302
RCA-405A-08
CVBS/Y/U/V

YUV only ---> W871,W872,W873,R7306 ON
YUV/D ---> W871,W872,W873,W874,W875,W876,R7306 ON
RGB/YUV ---> IC7302 MOUNT,JP DEL,R7305 ON

CAUTION: DIGITAL TRANSISTOR



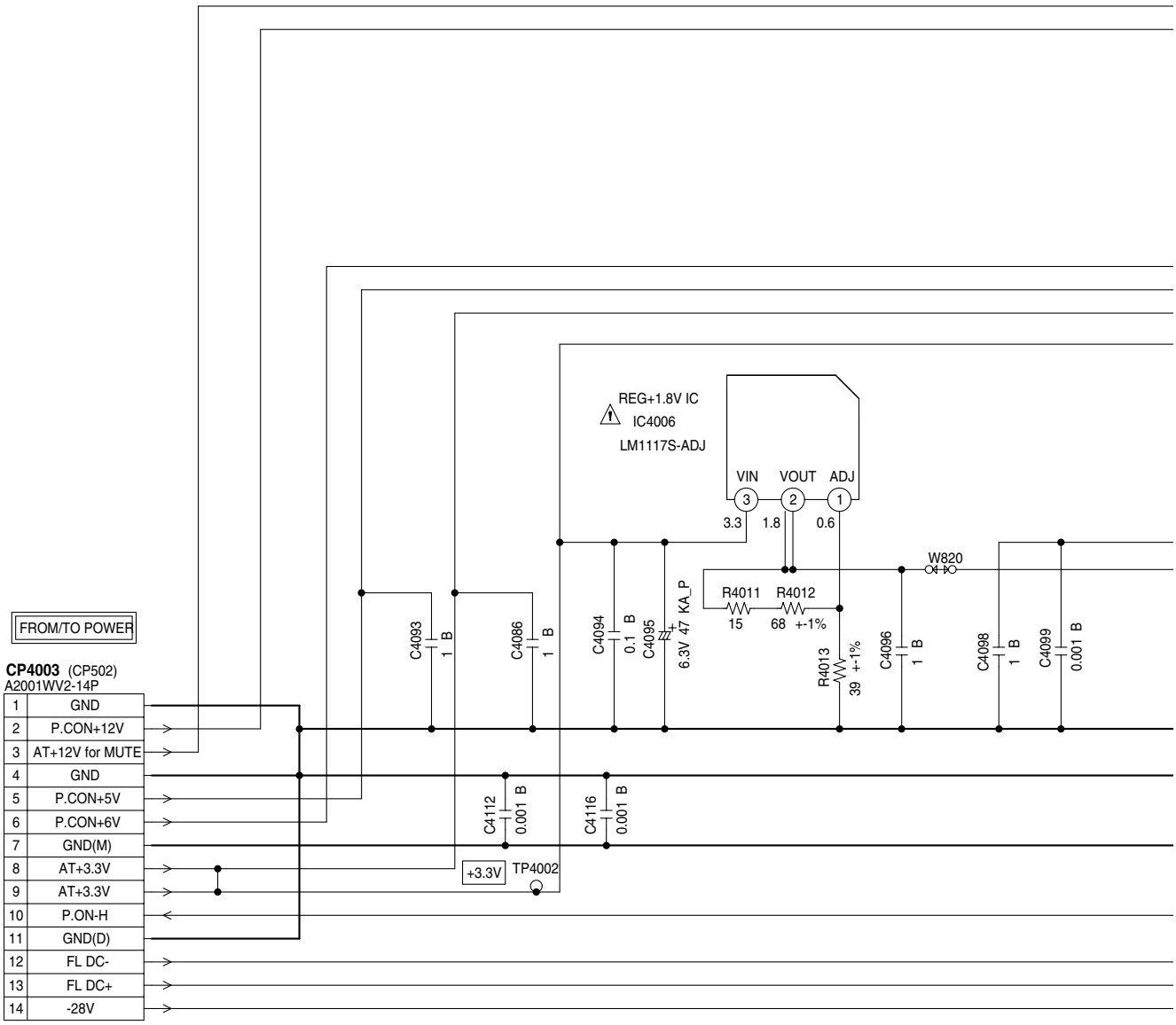
CAUTION: DIGITAL TRANSISTOR



PCB130
DMF089

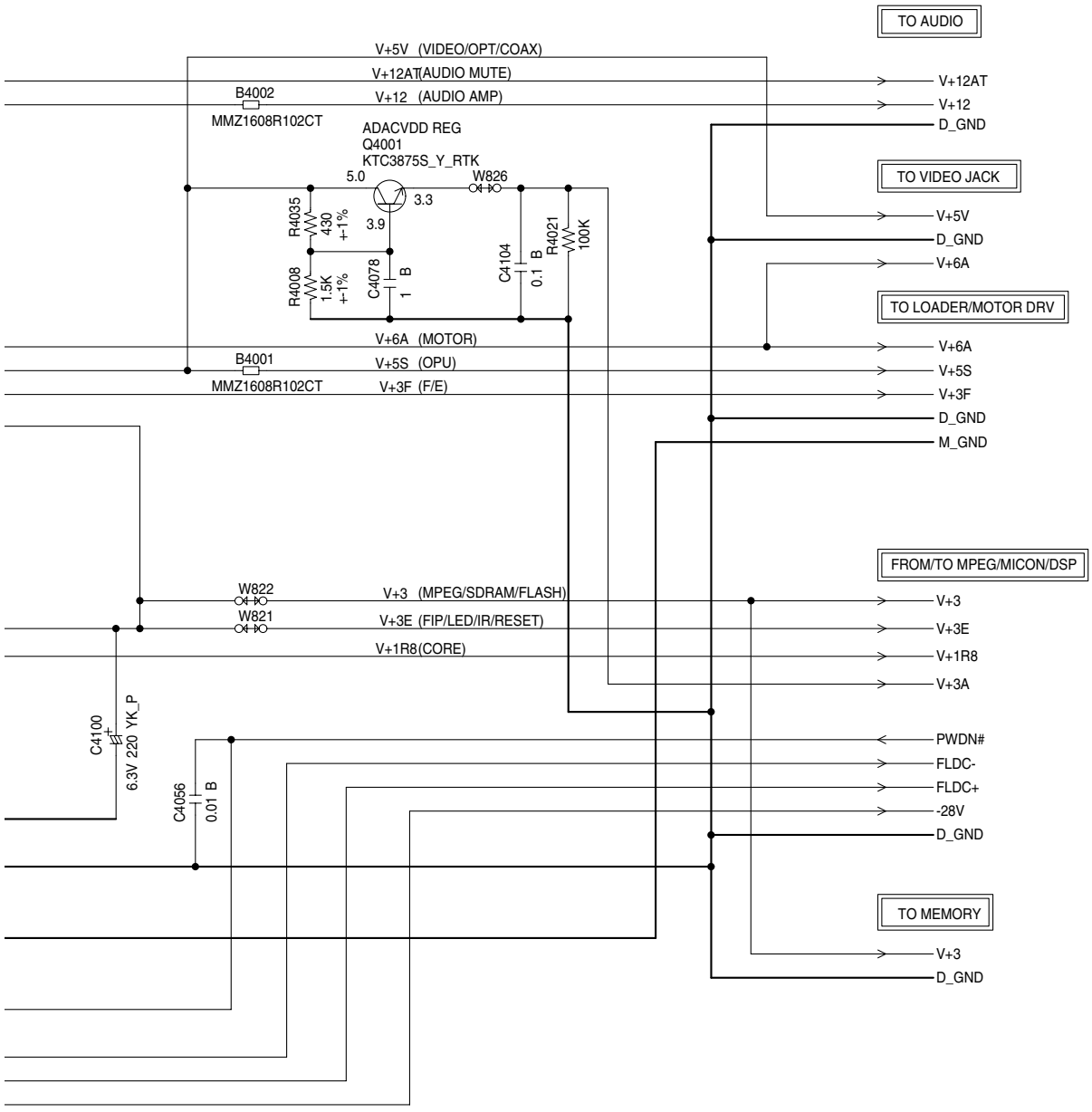
8.7 DVD MT PCB ASSY(6/6)

DVD MT PCB ASSY (6/6) (A2K001A130)



ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。



NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

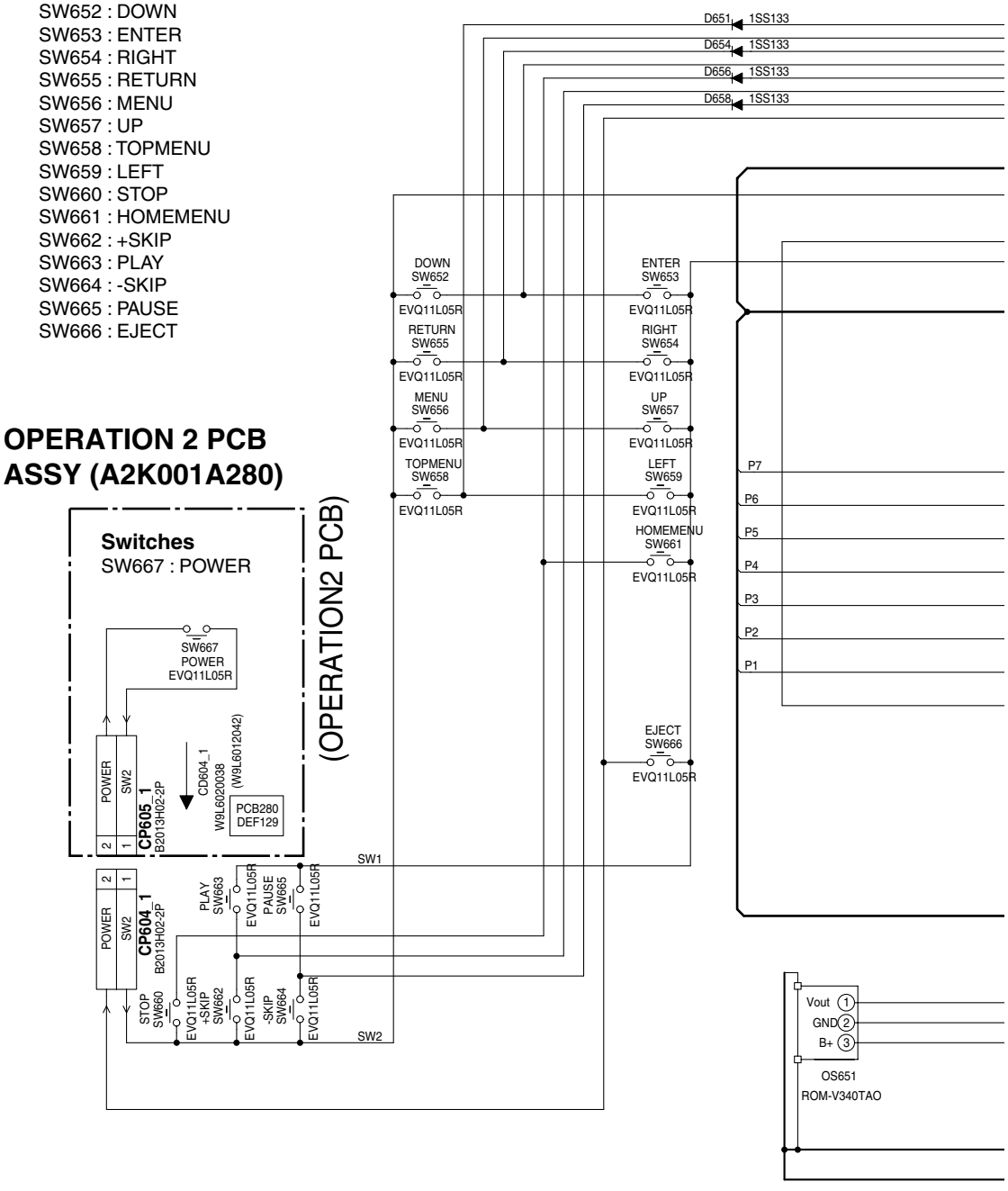
PCB130
DMF089

8.8 OPERATION 1 and OPERATION 2 PCB ASSYS (WYXZT5 types)

OPERATION 1 PCB ASSY (A2K001A270)

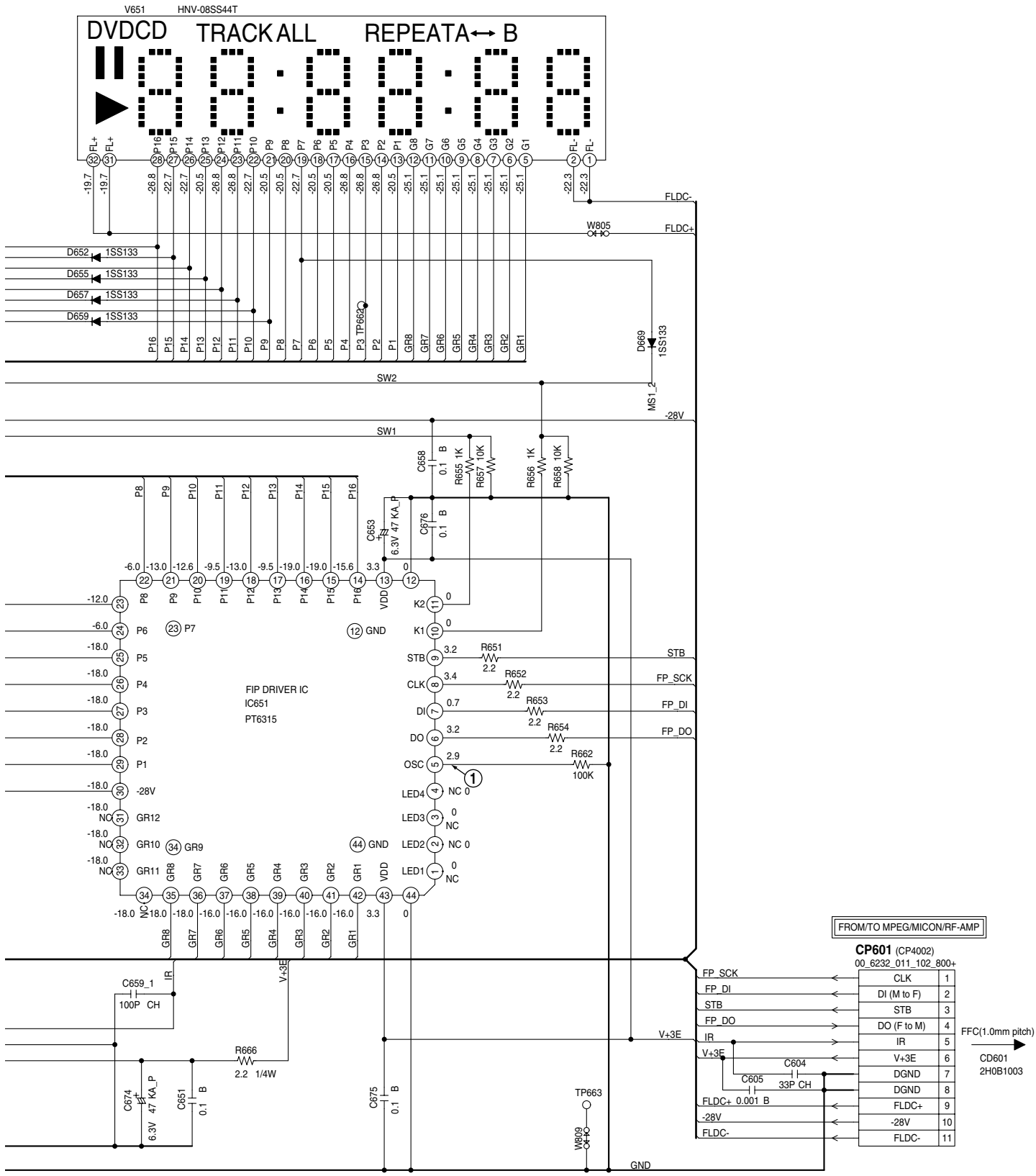
Switches
SW652 : DOWN
SW653 : ENTER
SW654 : RIGHT
SW655 : RETURN
SW656 : MENU
SW657 : UP
SW658 : TOPMENU
SW659 : LEFT
SW660 : STOP
SW661 : HOMEMENU
SW662 : +SKIP
SW663 : PLAY
SW664 : -SKIP
SW665 : PAUSE
SW666 : EJECT

OPERATION 2 PCB ASSY (A2K001A280)



NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

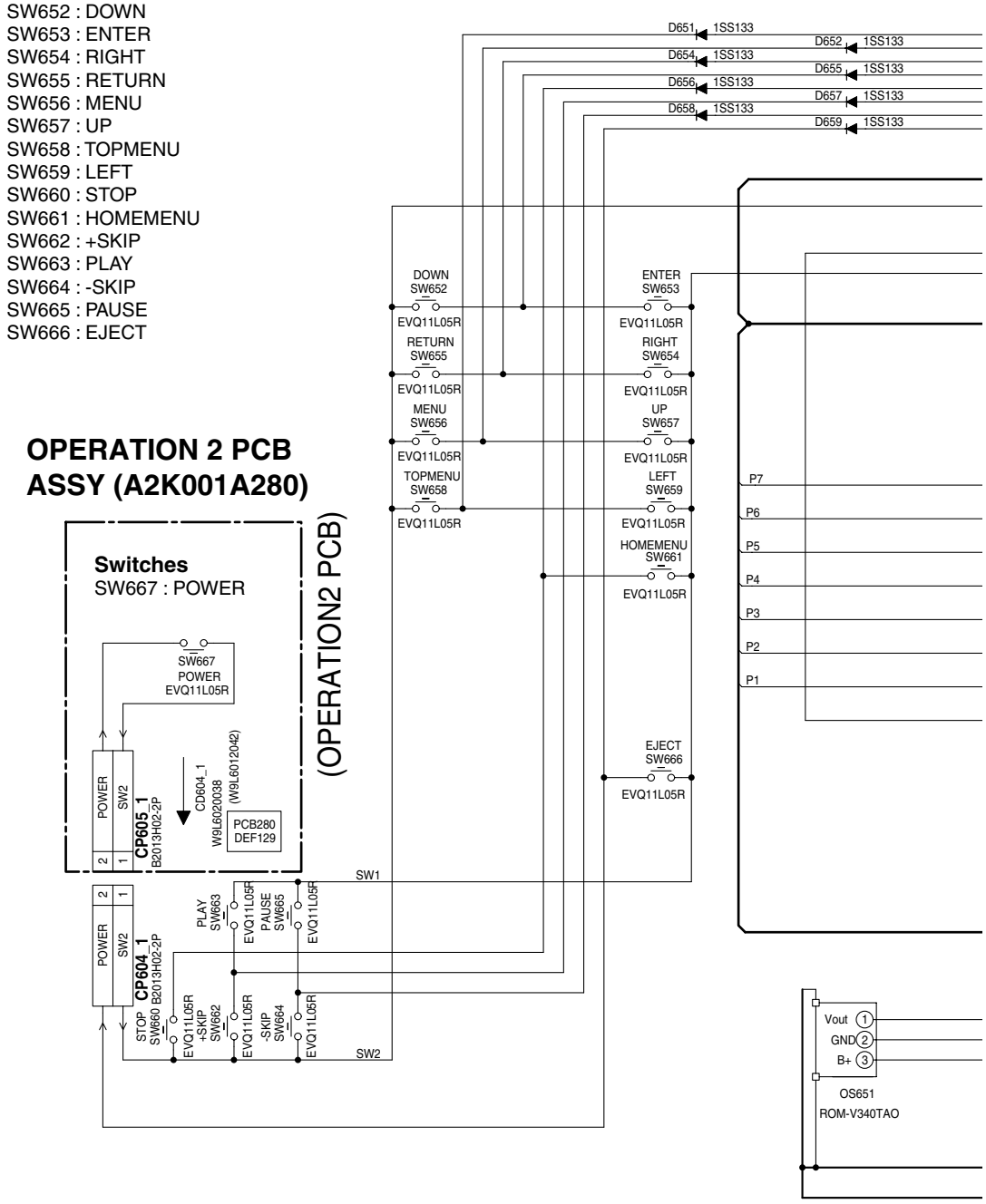
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。


V651 HNV-08SS44T
DVDCD TRACK ALL REPEATA↔B
FIP DRIVER IC
IC651
PT6315
FROM/TO MPEG/MICON/RF-AMP
CP601 (CP4002)
00_6232_011_102_800+
FFC(1.0mm pitch)
CD601
2H0B1003
PCB270
DEF126

8.9 OPERATION 1 and OPERATION 2 PCB ASSYS (WYXZT/UR5 types)

OPERATION 1 PCB ASSY (A2K006A270)

Switches
SW652 : DOWN
SW653 : ENTER
SW654 : RIGHT
SW655 : RETURN
SW656 : MENU
SW657 : UP
SW658 : TOPMENU
SW659 : LEFT
SW660 : STOP
SW661 : HOMEMENU
SW662 : +SKIP
SW663 : PLAY
SW664 : -SKIP
SW665 : PAUSE
SW666 : EJECT



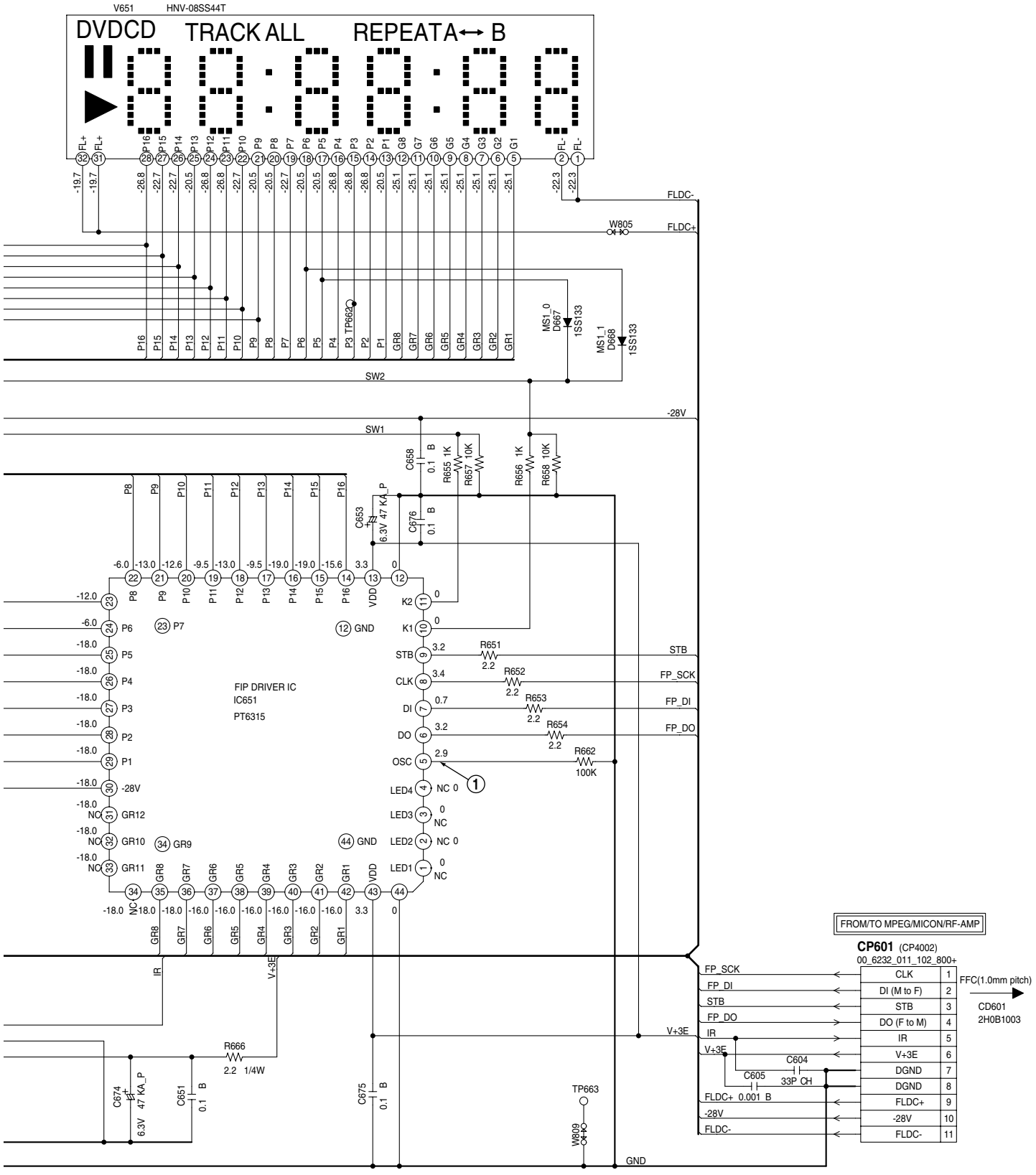
OPERATION 2 PCB ASSY (A2K001A280)

(OPERATION2 PCB)

Switches
SW667 : POWER

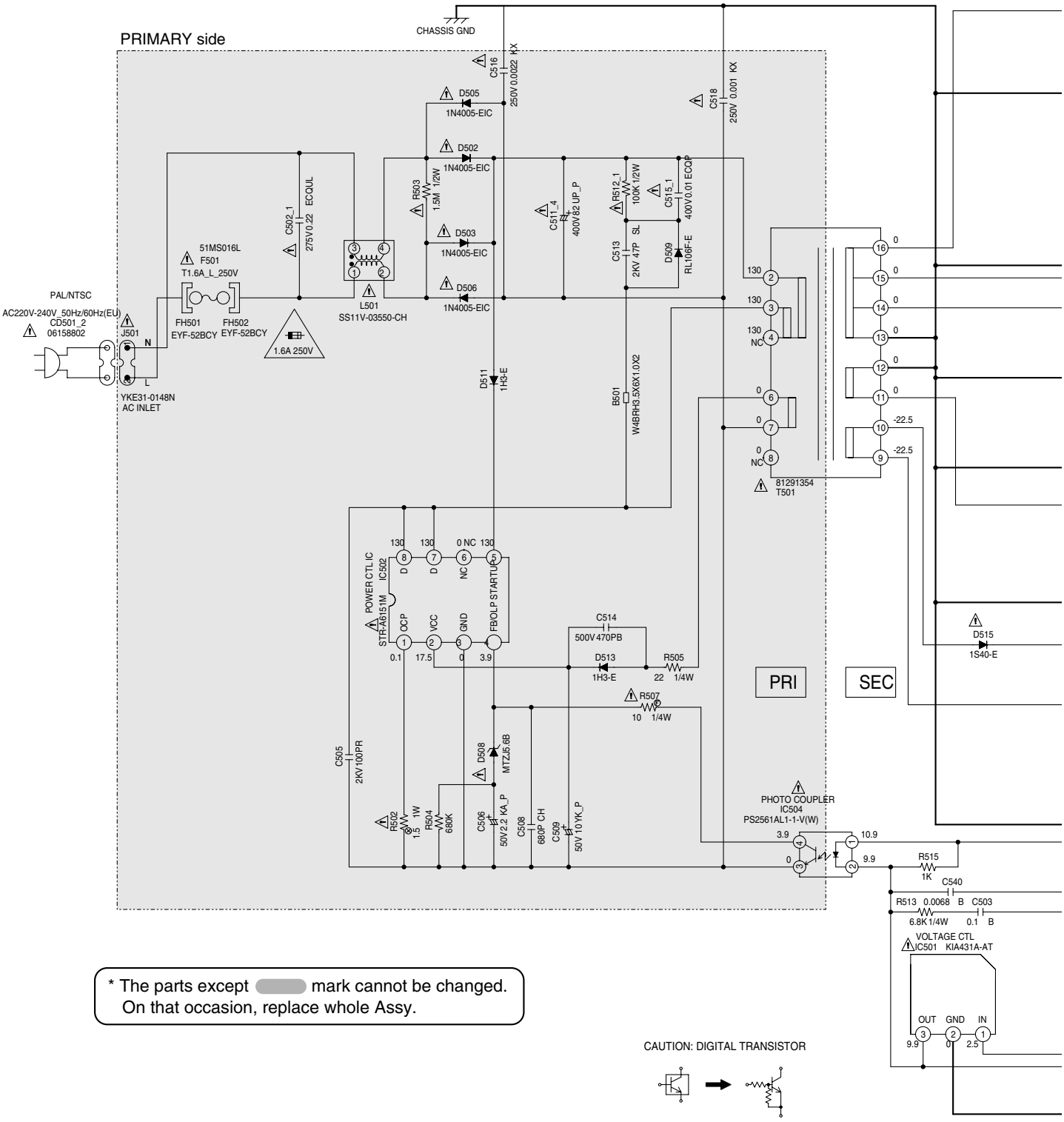
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。


V651 HNV-08SS44T
DVDCD TRACK ALL REPEATA↔B
FIP DRIVER IC
IC651
PT6315
FIP_SCK
FIP_DI
STB
FP_DO
IR
V+3E
FLDC+
FLDC-
-28V
GND
SW1
SW2
W805
TP663
TP662
MS1_0 D667 1SS133
MS1_1 D668 1SS133
FROM/TO MPEG/MICON/RF-AMP
CP601 (CP4002)
00_6232_011_102_800+
FFC(1.0mm pitch)
CD601
2H0B1003
CLK
DI (M to F)
STB
DO (F to M)
IR
V+3E
DGND
DGND
FLDC+
-28V
FLDC-
PCB270
DEF126

8.10 POWER PCB ASSY (1/2)

POWER PCB ASSY (1/2) (A2K001A240)



* The parts except ▭ mark cannot be changed.
On that occasion, replace whole Assy.

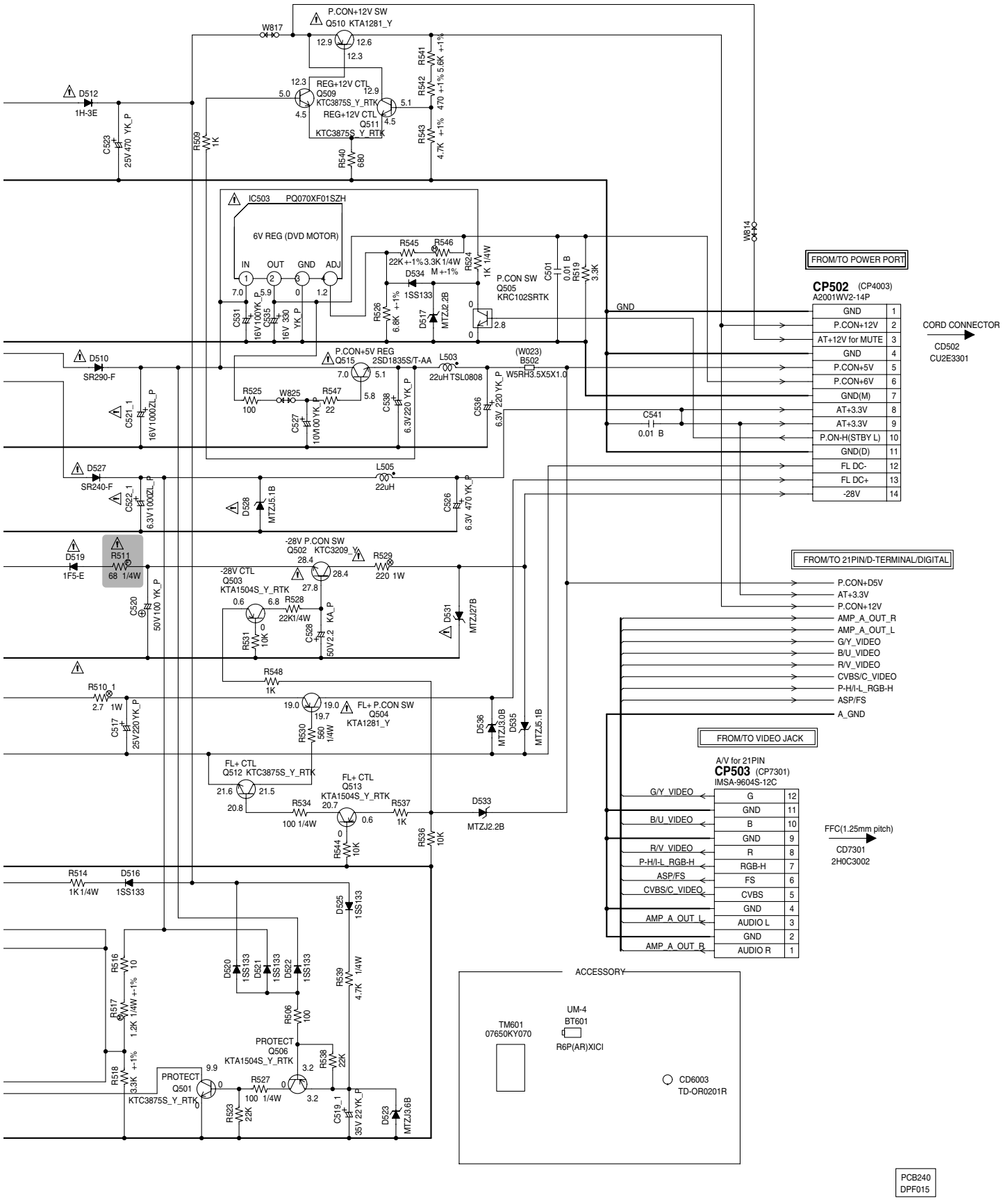
CAUTION: DIGITAL TRANSISTOR

1.6A 125V

CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 1.6A 125V{F501}

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 1.6A 125V{F501}

CAUTION :SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY。



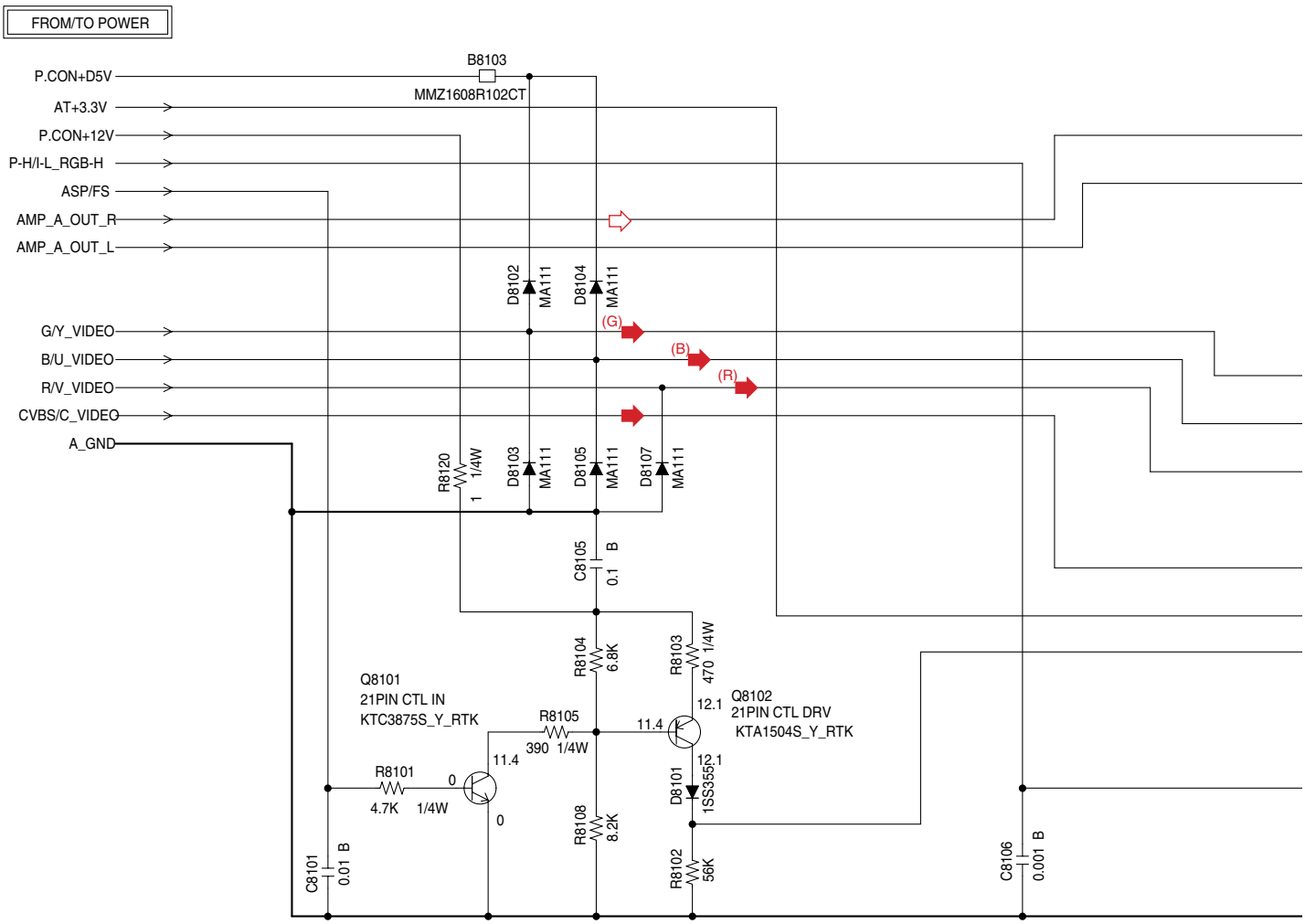
ATTENTION : LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

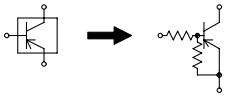
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

8.11 POWER PCB ASSY (2/2)

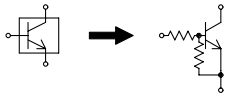
POWER PCB ASSY (2/2) (A2K001A240)

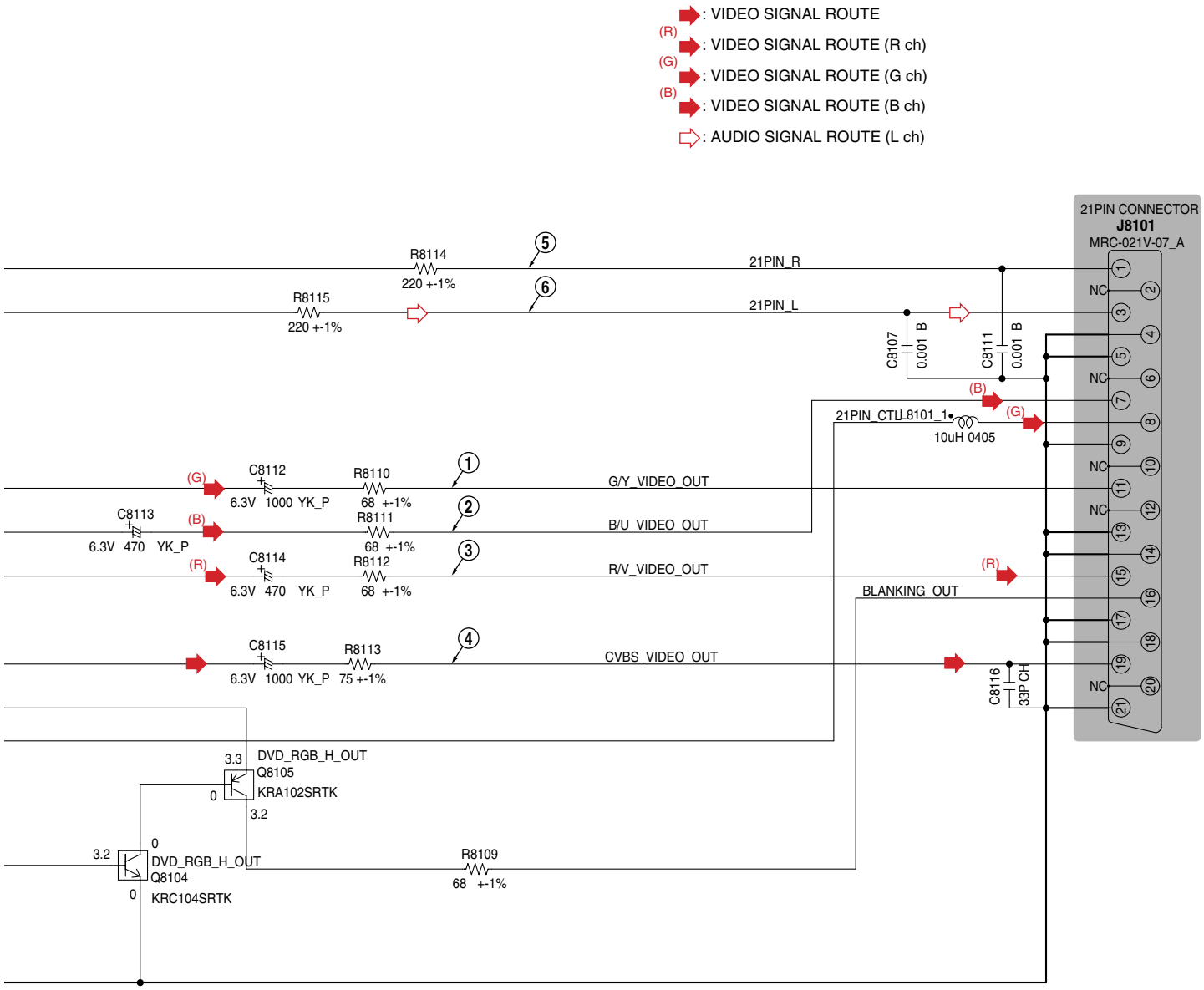


CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR





* The parts except [redacted] mark cannot be changed.
On that occasion, replace whole Assy.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB240
DPF015

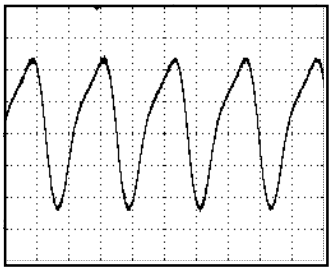
8.12 WAVE FORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

DVD MT PCB ASSY

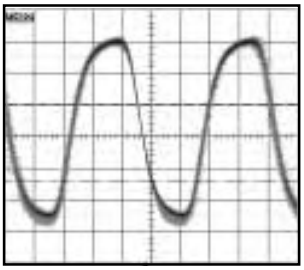
MPEG/MICON/DSP

X4001 (XTAL0)
V:200mV/div., H:500µsec/div.



①

IC4001-pin136 (RCLK)
V:1.0V/div. H:2nsec/div.

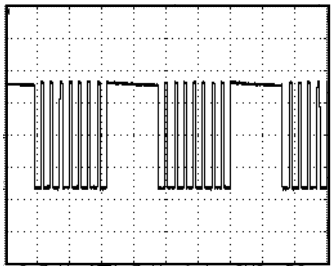


②

IC4001-pin159 (ASPDIF)
V:1.0V/div. H:200nsec/div.

③

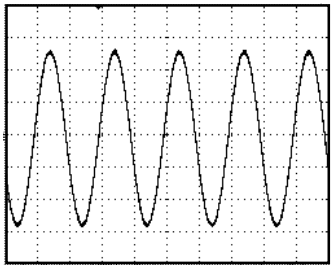
CP4002-pin1 (FP_SCK)
V:1.0V/div. H:20µsec/div.



④

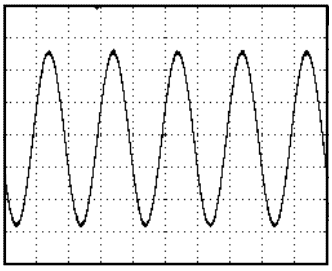
AUDIO JACK

J8003-pin3 (Lch_Out)
V:1.0V/div. H:500µsec/div.



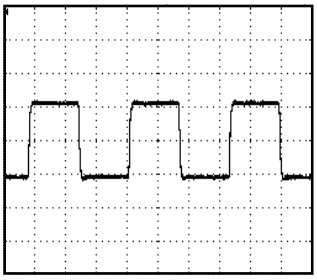
⑤

J8003-pin2 (Rch_Out)
V:1.0V/div. H:500µsec/div.



⑥

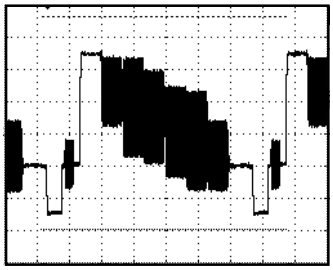
J8002-pin2 (Coaxial_Out)
V:500mV/div. H:200nsec/div.



⑦

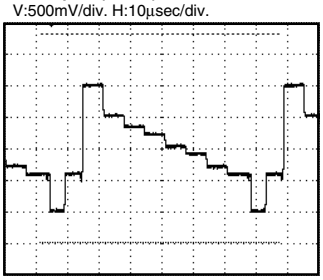
VIDEO JACK

J7302-pin6 (CVBS_Out)
V:200mV/div. H:10µsec/div.



⑧

J7302-pin5 (Y_Out)
V:500mV/div. H:10µsec/div.

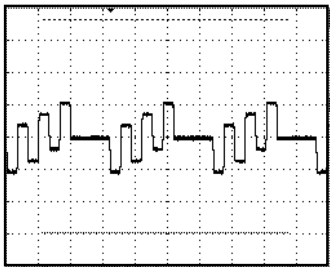


⑨

J7302-pin3 (U_Out)
V:500mV/div. H:20µsec/div.

⑩

J7302-pin2 (V_Out)
V:500mV/div. H:20µsec/div.

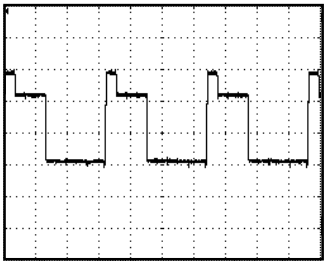


⑪

POWER PCB ASSY

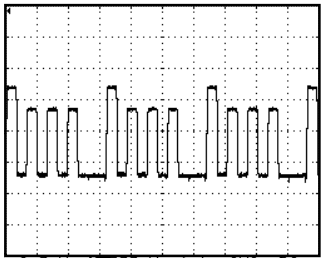
21PIN/D-TERMINAL/DIGITAL AUDIO

J8101-pin11 (G/Y_Video_Out)
V:500mV/div. H:20µsec/div.



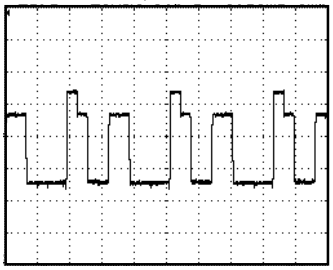
①

J8101-pin7 (B/U_Video_Out)
V:500mV/div. H:20µsec/div.



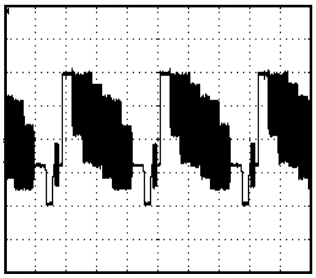
②

J8101-pin15 (R/V_Video_Out)
V:500mV/div. H:20µsec/div.



③

J8101-pin19 (CVBS_Video_Out)
V:500mV/div. H:20µsec/div.



④

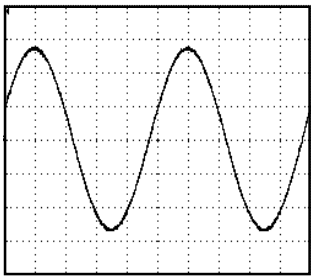
Note : The encircled numbers denote measuring point in the schematic diagram.

POWER PCB ASSY

21PIN/D-TERMINAL/DIGITAL AUDIO

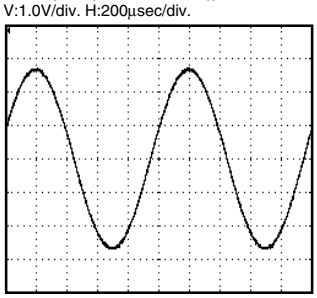
J8101-pin1 (AMP_A_Out_R))
V:1.0V/div. H:200µsec/div.

⑤



J8101-pin3 (AMP_A_Out_L))
V:1.0V/div. H:200µsec/div.

⑥

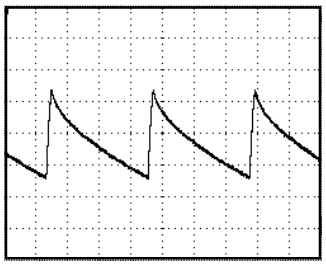


OPERATION 1 PCB ASSY

DISPLAY

IC651-pin5 (OSC)
V:500mV/div. H:1µsec/div.

①



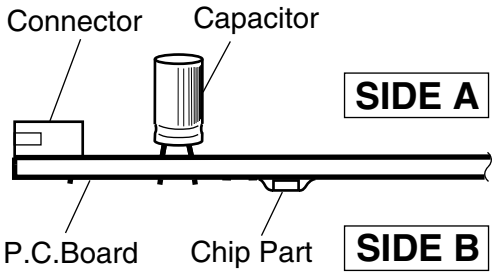
9. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

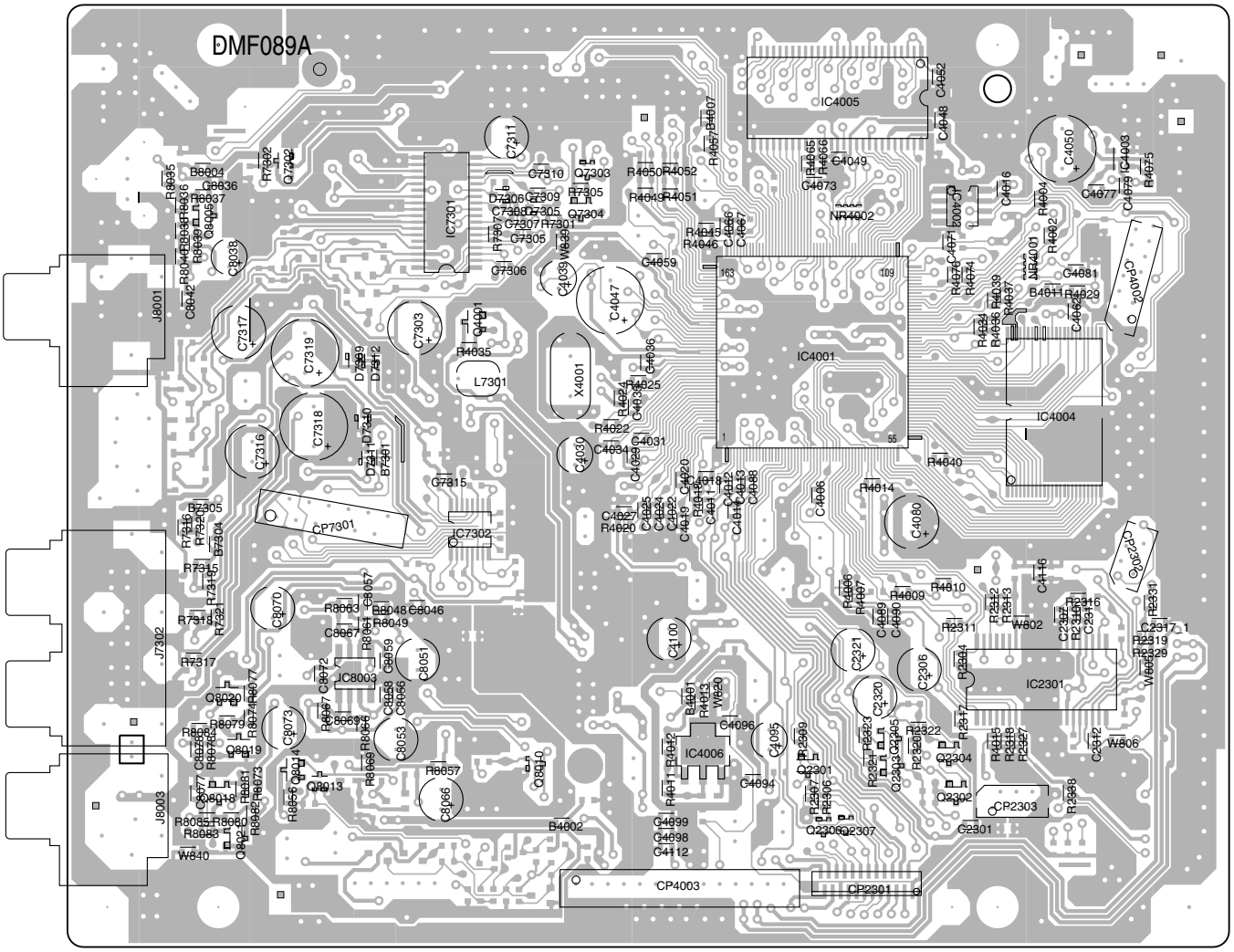
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



9.1 DVD MT PCB ASSY

SIDE A **SIDE A**

DVD MT PCB ASSY

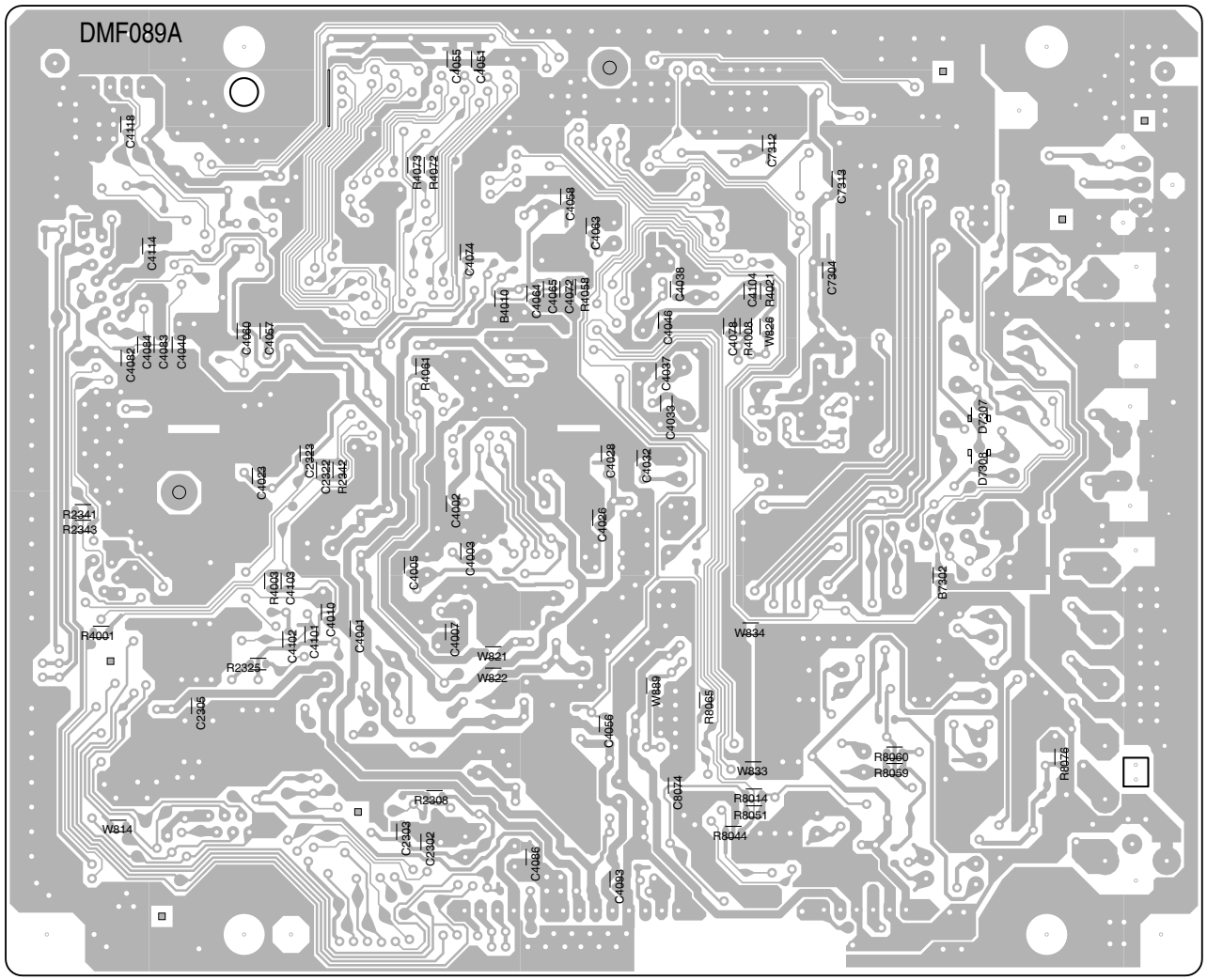


SIDE B

SIDE B

A

DVD MT PCB ASSY



B

C

D

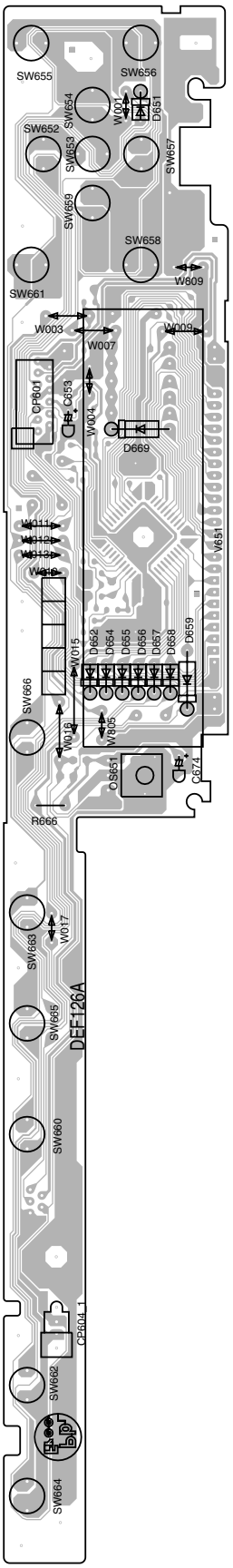
E

F

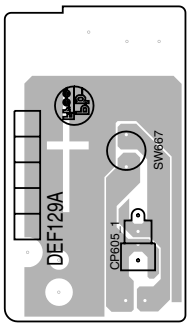
9.2 OPERATION 1 PCB and OPERATION 2 PCB ASSYS (WYXZT5 types)

SIDE A

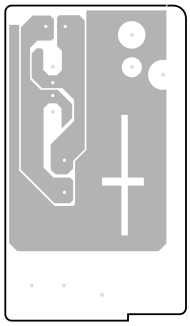
OPERATION 1 PCB ASSY (INSERTED PARTS)



OPERATION 2 PCB ASSY (INSERTED PARTS)

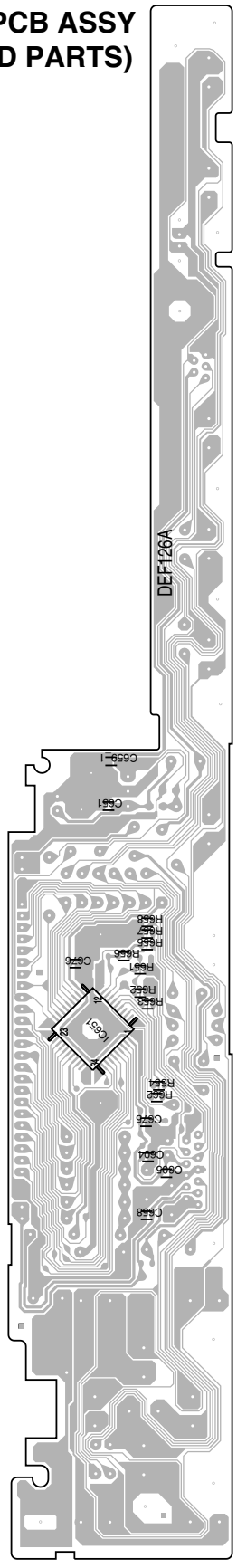


OPERATION 2 PCB ASSY (CHIP MOUNTED PARTS)



SIDE A

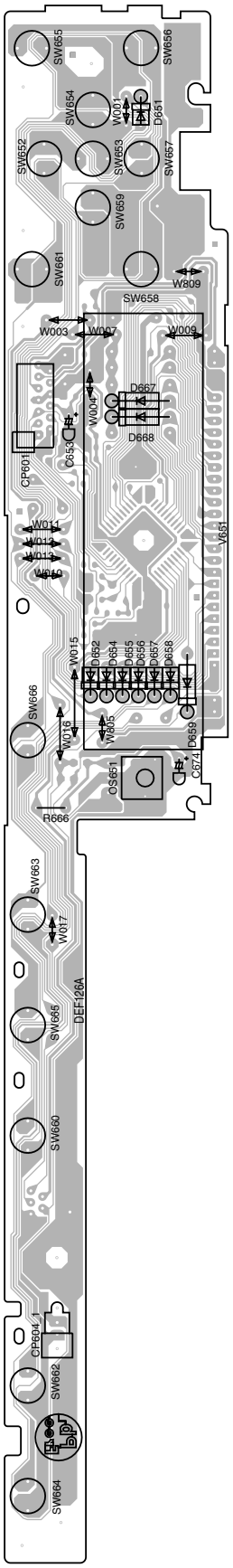
OPERATION 1 PCB ASSY (CHIP MOUNTED PARTS)



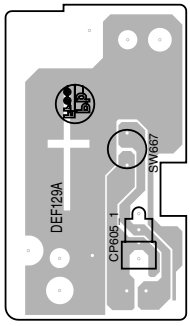
9.3 OPERATION 1 PCB and OPERATION 2 PCB ASSYS (WYXZT/UR5 types)

SIDE A

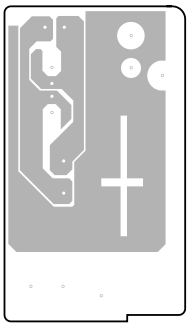
OPERATION 1 PCB ASSY (INSERTED PARTS)



OPERATION 2 PCB ASSY (INSERTED PARTS)

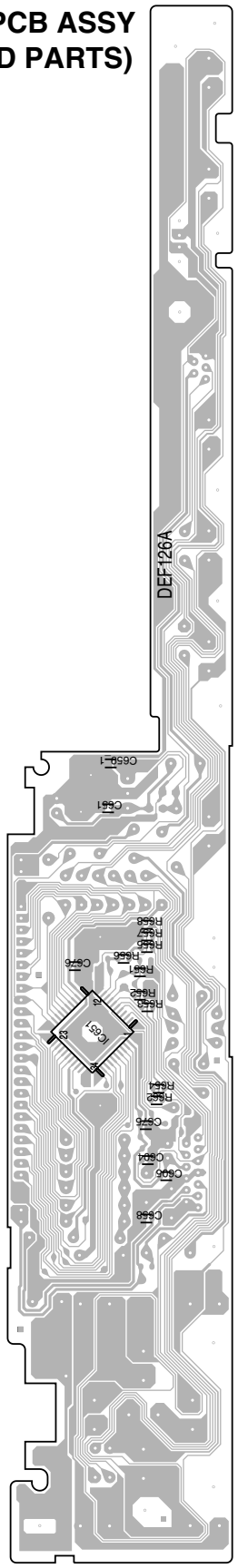


OPERATION 2 PCB ASSY (CHIP MOUNTED PARTS)



SIDE A

OPERATION 1 PCB ASSY (CHIP MOUNTED PARTS)

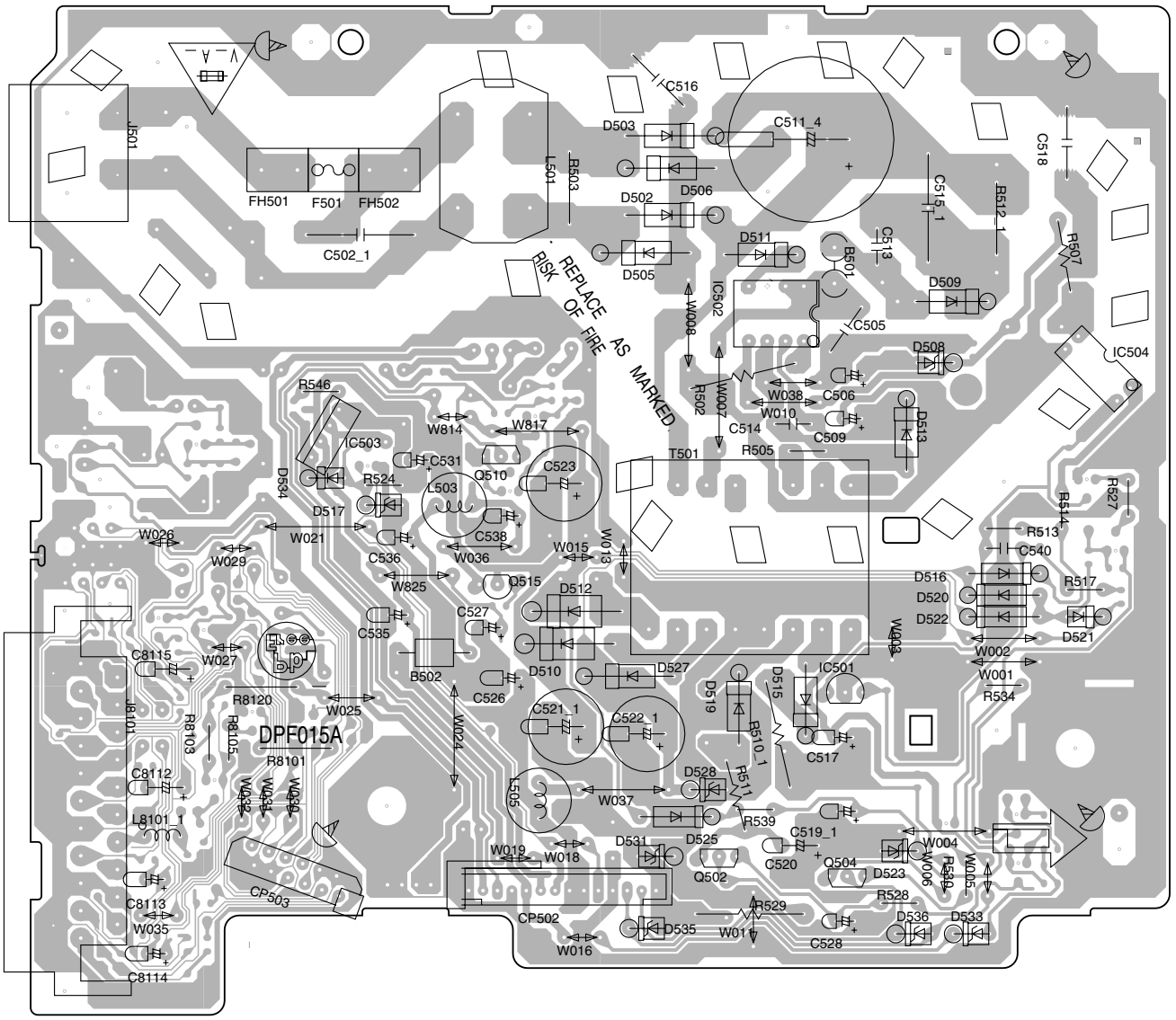


9.4 POWER PCB ASSY

SIDE A

SIDE A

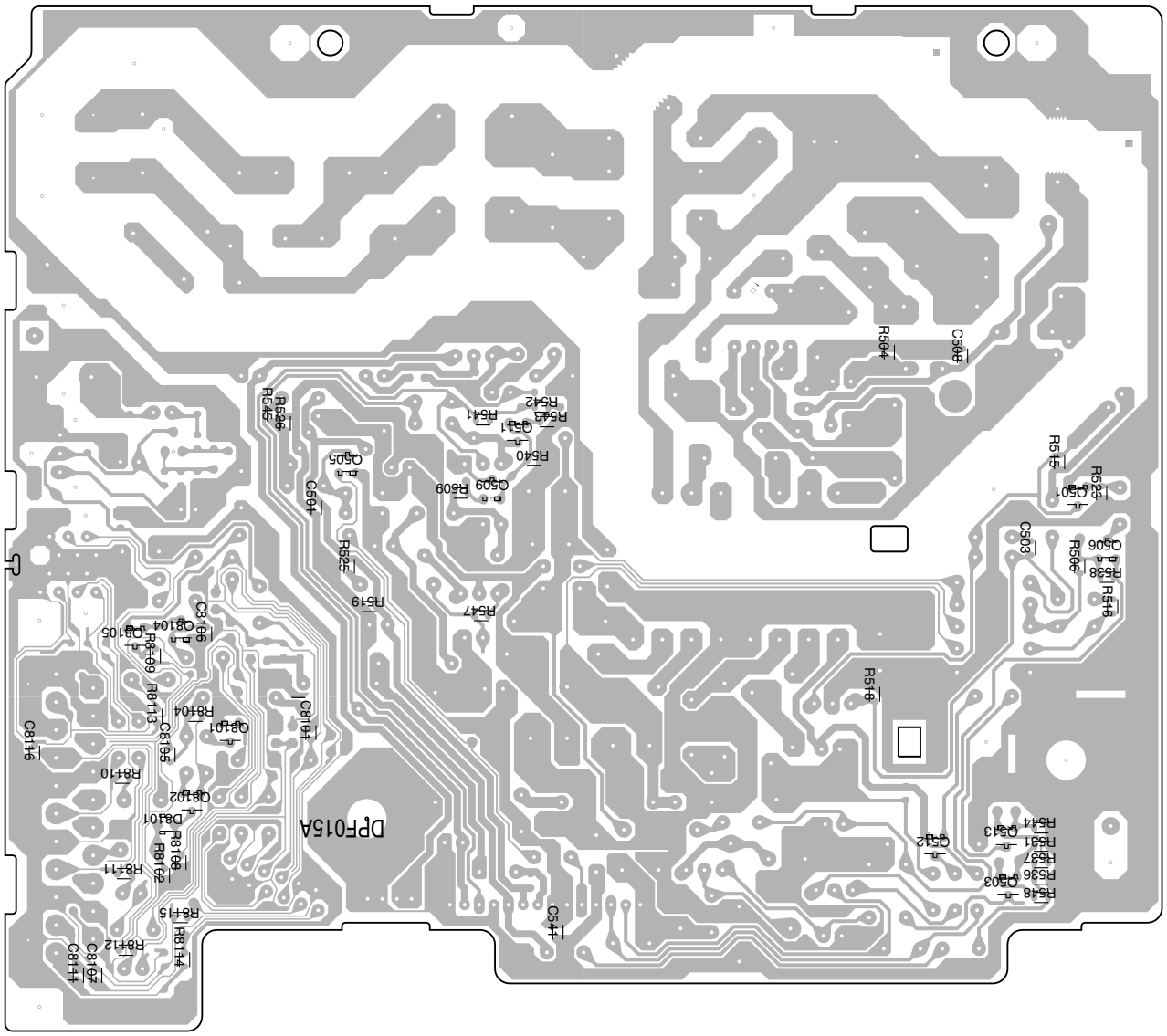
POWER PCB ASSY (INSERTED PARTS)



SIDE A

SIDE A

POWER PCB ASSY (CHIP MOUNTED PARTS)



10. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10^1* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10^3* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		*RN2H R 5 0 K*
1 Ω	→ *1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10^1* →	*5621*	*RN1/4PC 5 6 2 1 F*

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
	1..	DVD MT PCB ASSY	A2K001A130
	1..	OPERATION 1 PCB ASSY (WYXZT5 types) (*)	A2K001A270
	1..	OPERATION 1 PCB ASSY (WYXZT/UR5 types) (*)	A2K006A270
	1..	OPERATION 2 PCB ASSY	A2K001A280
	1..	POWER PCB ASSSY	A2K001A240
	1..	DVD MECHA ASSY	A2K001A650

(*) A2K001A270 and A2K006A270 have same service parts.

Mark	No.	Description	Part No.
DVD MT PCB ASSY			
SEMICONDUCTORS			
	IC2301	IC AM5766	I1UFV5766S
	IC4001	IC MT1389FE/E-L	IC8K0389E0
	IC4002	IC S-24CS08AFJ-TB-1GE	I5HJ0S08A0
	IC4003	IC R3112N291A-TR-FA	IE1F0291A0
	IC4004	IC ES29LV160EB-70TG	S2K001AF01
	IC4005	IC HY57V641620ETP-7	IF3J0TPC0
	IC4006	IC LM1117S-ADJ	I1TF911170
	IC7301	IC LA73054-TLM	I03FG30540
	IC7302	IC SN74CBT3257PWR	I5CJ032570
	IC8003	IC RC4580IDR	I04J045800
OTHERS			
	J7302	RCA JACK	060R451010
	J8001	RCA JACK	060R401122
	J8003	RCA JACK	060J451009
	X4001	CRYSTAL (27MHz)	100GT02720
OPERATION 1 PCB ASSY			
SEMICONDUCTORS			
	IC651	IC PT6315	IF4K063150
SWITCHES AND RELAYS			
	SW652 - SW666	SWITCH TACT	0504R01T38
OTHERS			
	V651	TUBE FLUORESCENT	096F82R601
	OS651	REMOTE RECEIVER	077A040002

Mark	No.	Description	Part No.
OPERATION 2 PCB ASSY			
SWITCHES AND RELAYS			
	SW667	SWITCH TACT	0504R01T38
POWER PCB ASSY			
RESISTORS			
⚠	R511	R,FUSE 68 OHM 1/4W	R65584680J
OTHERS			
	J8101	SOCKET, 21PIN	063D100050

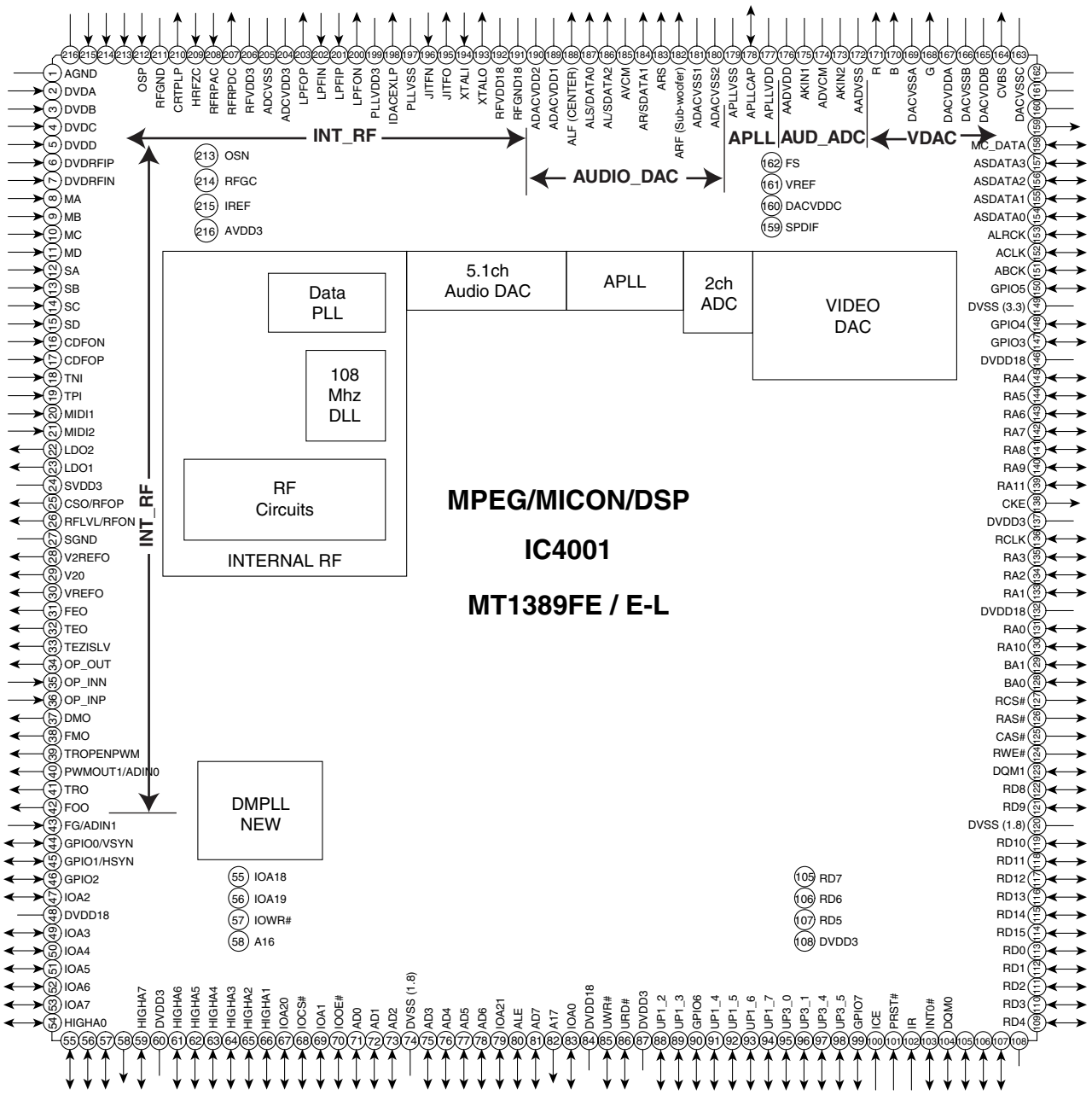
11. IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ MT1389FE/E-L (DVD MT PCB ASSY: IC4001)

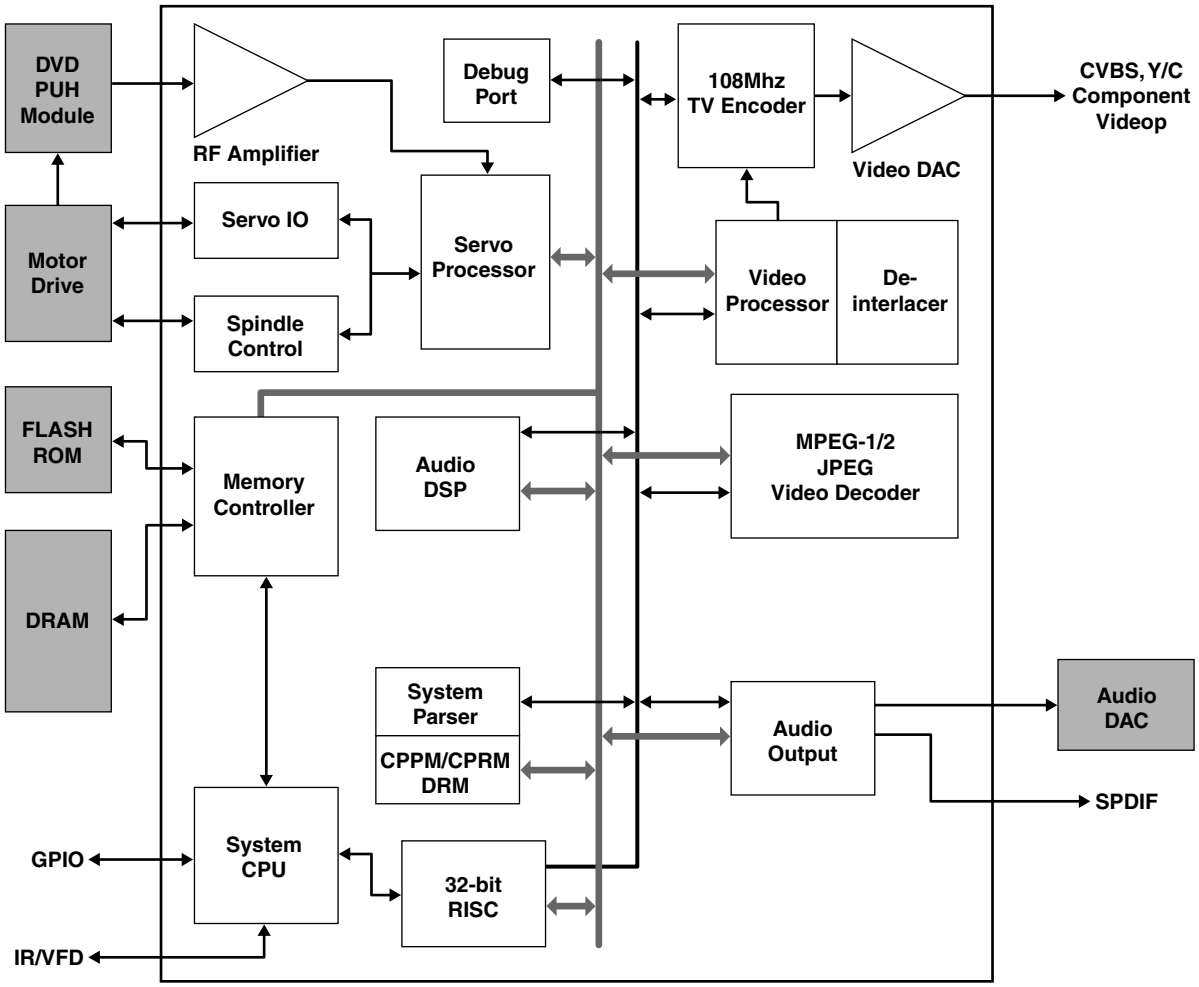
• MPEG / MICON / DSP

• Pin Arrangement (Top view)



• MPEG / MICON / DSP Microcomputer

• Block Diagram



• Pin Function

Abbreviations:

- SR: Slew Rate
- PU: Pull Up
- PD: Pull Down
- SMT: Schmitt Trigger
- 4mA~16mA: Output buffer driving strength.

Pin	Main	Alt.	Type	Description
RF Interface (26)				
191	RFGND18		Ground	Analog ground
192	RFVDD18		Power	Analog power 1.8V
212	OSP		Analog output	RF Offset cancellation capacitor connecting
213	OSN		Analog output	RF Offset cancellation capacitor connecting
214	RFGC		Analog output	RF AGC loop capacitor connecting for DVD-ROM
215	IREF		Analog Input	Current reference input. It generates reference current for RF path. Connect an external 15K resistor to this pin and AVSS
216	AVDD3		Power	Analog power 3.3V
1	AGND		Ground	Analog ground
2	DVDA		Analog Input	AC coupled input path A
3	DVDB		Analog Input	AC coupled input path B
4	DVDC		Analog Input	AC coupled input path C
5	DVDD		Analog Input	AC coupled input path D
6	DVDRFIP		Analog Input	AC coupled DVD RF signal input RFIP
7	DVDRFIN		Analog Input	AC coupled DVD RF signal input RFIN
8	MA		Analog Input	DC coupled main-beam RF signal input A
9	MB		Analog Input	DC coupled main-beam RF signal input B
10	MC		Analog Input	DC coupled main-beam RF signal input C
11	MD		Analog Input	DC coupled main-beam RF signal input D
12	SA		Analog Input	DC coupled sub-beam RF signal input A
13	SB		Analog Input	DC coupled sub-beam RF signal input B
14	SC		Analog Input	DC coupled sub-beam RF signal input C
15	SD		Analog Input	DC coupled sub-beam RF signal input D
16	CDFON		Analog Input	CD focusing error negative input
17	CDFOP		Analog Input	CD focusing error positive input
18	TNI		Analog Input	3 beam satellite PD signal negative input
19	TPI		Analog Input	3 beam satellite PD signal positive input
ALPC (4)				
20	MDI1		Analog Input	Laser power monitor input

Pin	Main	Alt.	Type	Description
21	MDI2		Analog Input	Laser power monitor input
22	LDO2		Analog Output	Laser driver output
23	LDO1		Analog Output	Laser driver output
Reference Voltage (3)				
28	V2REFO		Analog output	Reference voltage 2.8V
29	V20		Analog output	Reference voltage 2.0V
30	VREFO		Analog output	Reference voltage 1.4V
Analog Monitor Output (7)				
24	SVDD3		Power	Analog power 3.3V
25	CSO	RFOP	Analog output	1) Central servo 2) Positive main beam summing output
26	RFLVL	RFON	Analog output	1) RFRP low pass, or 2) Negative main beam summing output
27	SGND		Ground	Analog ground
31	FEO		Analog output	Focus error monitor output
32	TEO		Analog output	Tracking error monitor output
33	TEZISLV		Analog output	TE slicing Level
Analog Servo Interface (8)				
204	ADCVDD3		Power	Analog 3.3V power for ADC
205	ADCVSS		Ground	Analog ground for ADC
206	RFVDD3		Power	Analog power
207	RFRPDC		Analog output	RF ripple detect output
208	RFRPAC		Analog Input	RF ripple detect input (through AC-coupling)
209	HRFZC		Analog Input	High frequency RF ripple zero crossing
210	CRTPLP		Analog output	Defect level filter capacitor connecting
211	RFGND		Ground	Analog Power
RF Data PLL Interface (9)				
195	JITFO		Analog output	Output terminal of RF jitter meter
196	JITFN		Analog Input	Input terminal of RF jitter meter
197	PLLVSS		Ground	Ground pin for data PLL and related analog circuitry
198	IDACEXLP		Analog output	Data PLL DAC Low-pass filter
199	PLLVDD3		Power	Power pin for data PLL and related analog circuitry
200	LPFON		Analog Output	Negative output of loop filter amplifier
201	LPFIP		Analog Input	Positive input terminal of loop filter amplifier
202	LPFIN		Analog Input	Negative input terminal of loop filter amplifier
203	LPFOP		Analog Output	Positive output of loop filter amplifier
Motor and Actuator Driver Interface (10)				

Pin	Main	Alt.	Type	Description
34	OP_OUT		Analog output	Op amp output
35	OP_INN		Analog input	Op amp negative input
36	OP_INP		Analog input	Op amp positive input
37	DMO		Analog Output	Disk motor control output. PWM output
38	FMO		Analog Output	Feed motor control. PWM output
39	TROPENPWM		Analog Output	Tray PWM output/Tray open output
40	PWMOUT1	ADIN0	Analog Output	1) 1st General PWM output 2) AD input 0
41	TRO		Analog Output	Tracking servo output. PDM output of tracking servo compensator
42	FOO		Analog Output	Focus servo output. PDM output of focus servo compensator
43	FG (Digital pin)	ADIN1 GPIO	LVTTL 3.3V Input, Schmitt Input, pull up, with analog input path for ADIN1	1) Motor Hall sensor input 2) AD input 1 3) GPIO
General Power/Ground (11)				
48,84, 132, 146	DVDD18		Power	1.8V power pin for internal digital circuitry
74, 120	DVSS		Ground	1.8V Ground pin for internal digital circuitry
60,87, 108,137	DVDD3		Power	3.3V power pin for internal digital circuitry
149	DVSS		Ground	3.3V Ground pin for internal digital circuitry
Micro Controller and Flash Interface (48)				
54	HIGHA0		InOut 4~16mA, SR PU	Microcontroller address 8
66	HIGHA1		InOut 4~16mA, SR PU	Microcontroller address 9
65	HIGHA2		InOut 4~16mA, SR PU	Microcontroller address 10
64	HIGHA3		InOut 4~16mA, SR PU	Microcontroller address 11
63	HIGHA4		InOut 4~16mA, SR PU	Microcontroller address 12
62	HIGHA5		InOut 4~16mA, SR PU	Microcontroller address 13
61	HIGHA6		InOut 4~16mA, SR PU	Microcontroller address 14

Pin	Main	Alt.	Type	Description
59	HIGHA7		InOut 4~16mA, SR PU	Microcontroller address 15
81	AD7		InOut 4~16mA, SR	Microcontroller address/data 7
78	AD6		InOut 4~16mA, SR	Microcontroller address/data 6
77	AD5		InOut 4~16mA, SR	Microcontroller address/data 5
76	AD4		InOut 4~16mA, SR	Microcontroller address/data 4
75	AD3		InOut 4~16mA, SR	Microcontroller address/data 3
73	AD2		InOut 4~16mA, SR	Microcontroller address/data 2
72	AD1		InOut 4~16mA, SR	Microcontroller address/data 1
71	AD0		InOut 4~16mA, SR	Microcontroller address/data 0
83	IOA0		InOut 4~16mA, SR PU	Microcontroller address 0 / IO
69	IOA1		InOut 4~16mA, SR PU	Microcontroller address 1 / IO
47	IOA2		InOut 4~16mA, SR PU	Microcontroller address 2 / IO
49	IOA3		InOut 4~16mA, SR PU	Microcontroller address 3 / IO
50	IOA4		InOut 4~16mA, SR PU	Microcontroller address 4 / IO
51	IOA5		InOut 4~16mA, SR PU	Microcontroller address 5 / IO
52	IOA6		InOut 4~16mA, SR PU	Microcontroller address 6 / IO
53	IOA7		InOut 4~16mA, SR PU	Microcontroller address 7 / IO
58	A16		Output 4~16mA, SR PU	Flash address 16

Pin	Main	Alt.	Type	Description
82	A17		Output 4~16mA, SR PU	Flash address 17
55	IOA18		InOut 4~16mA, SR PD, SMT	Flash address 18 / IO
56	IOA19		InOut 4~16mA, SR PD, SMT	Flash address 19 / IO
67	IOA20	YUV0	InOut 4~16mA, SR PD, SMT	1) Flash address 20 / IO 2) While External Flash size <= 1MB: I) Alternate digital video YUV output 0
79	IOA21	YUV7 GPIO	InOut 4~16mA, SR PD, SMT	1) Flash address 21 / IO 2) While External Flash size <= 2MB: I) Digital video YUV output 7 II) GPIO
80	ALE		InOut 4~16mA, SR PU, SMT	Microcontroller address latch enable
70	IOOE#		InOut 4~16mA, SR SMT	Flash output enable, active low / IO
57	IOWR#		InOut 4~16mA, SR PU, SMT	Flash write enable, active low / IO
68	IOCS#		InOut 4~16mA, SR SMT	Flash chip select, active low / IO
85	UWR#		InOut 4~16mA, SR PU, SMT	Microcontroller write strobe, active low
86	URD#		InOut 4~16mA, SR PU, SMT	Microcontroller read strobe, active low
88	UP1_2		InOut 4mA, SR PU, SMT	Microcontroller port 1-2
89	UP1_3		InOut 4mA, SR PU, SMT	Microcontroller port 1-3
91	UP1_4		InOut 4mA, SR PU, SMT	Microcontroller port 1-4
92	UP1_5		InOut 4mA, SR PU, SMT	Microcontroller port 1-5

Pin	Main	Alt.	Type	Description
93	UP1_6	SCL	InOut 4mA, SR PU, SMT	1) Microcontroller port 1-6 2) I^2C clock pin
94	UP1_7	SDA	InOut 4mA, SR PU, SMT	1) Microcontroller port 1-7 2) I^2C data pin
95	UP3_0	RXD	InOut 4mA, SR PU, SMT	1) Microcontroller port 3-0 2) 8032 RS232 RxD
96	UP3_1	TXD	InOut 4mA, SR PU, SMT	1) Microcontroller port 3-1 2) 8032 RS232 TxD
97	UP3_4	RXD SCL	InOut 4mA, SR PU, SMT	1) Microcontroller port 3-4 2) Hardwired RD232 RxD 3) I^2C clock pin
98	UP3_5	TXD SDA	InOut 4mA, SR PU, SMT	1) Microcontroller port 3-5 2) Hardwired RD232 TxD 3) I^2C data pin
102	IR		Input SMT	IR control signal input
103	INT0#		InOut 4~16mA, SR PU, SMT	Microcontroller external interrupt 0, active low
Audio interface (28)				
153	ALRCK	YUV1 GPO	InOut 4mA, PD, SMT	1) Audio left/right channel clock 2) Trap value in power-on reset: I) 1: use external 373 II) 0: use internal 373 3) While internal audio DAC used: I) Digital video YUV output 1 II) GPO
151	ABCK	YUV0 GPIO	InOut 4mA	1) Audio bit clock 2) While internal audio DAC used: I) Digital video YUV output 0 II) GPIO
152	ACLK	YUV0 GPIO	InOut 4mA SMT	1) Audio DAC master clock 2) While internal audio DAC used: I) Alternate digital video YUV output 0 II) GPIO

Pin	Main	Alt.	Type	Description
154	ASDATA0	YUV2 GPO	InOut 4mA PD SMT	1) Audio serial data 0 (Front-Left/Front-Right) 2) Trap value in power-on reset: I) 1: manufactory test mode II) 0: normal operation 3) While internal audio DAC used: I) Digital video YUV output 2 II) GPO
155	ASDATA1	YUV4 GPO	InOut 4mA PD SMT	1) Audio serial data 1 (Left-Surround/Right-Surround) 2) Trap value in power-on reset: I) 1: manufactory test mode II) 0: normal operation 3) While only 2 channels output: I) Digital video YUV output 4 II) GPO
156	ASDATA2	YUV5 GPO	InOut 4mA PD SMT	1) Audio serial data 2 (Center/LFE) 2) Trap value in power-on reset: I) 1: manufactory test mode II) 0: normal operation 3) While only 2 channels output: I) Digital video YUV output 5 II) GPO
157	ASDATA3	YUV6 GPIO	InOut 4mA PD SMT	1) Audio serial data 3 (Center-back/ Center-left-back/Center-right-back, in 6.1 or 7.1 mode) 2) While only 2 channels output: I) Digital video YUV output 6 II) GPIO
158	MC_DATA	INT2# YUV0 GPIO	InOut 2mA	1) Microphone serial input 2) While not support Microphone: I) Microcontroller external interrupt 2 II) Digital video YUV output 0 III) GPIO
159	SPDIF		Output 4~16mA, SR: ON/OFF	S/PDIF output
172	AADVSS		Ground	Ground pin for 2ch audio ADC circuitry
173	AKIN2		Analog	Audio ADC input 2
174	ADVCM		Analog	2ch audio ADC reference voltage
175	AKIN1		Analog	Audio ADC input 1
176	AADVDD		Power	3.3V power pin for 2ch audio ADC circuitry
177	APLLVDD3		Power	3.3V Power pin for audio clock circuitry
178	APLLCAP		Analog InOut	APLL external capacitance connection
179	APLLVSS		Ground	Ground pin for audio clock circuitry
180	ADACVSS2		Ground	Ground pin for audio DAC circuitry
181	ADACVSS1		Ground	Ground pin for audio DAC circuitry
182	ARF	GPIO	Output	1) Audio DAC sub-woofer channel output 2) While internal audio DAC not used: GPIO

Pin	Main	Alt.	Type	Description
183	ARS	GPIO	Output	1) Audio DAC right Surround channel output 2) While internal audio DAC not used: GPIO
184	AR	GPIO	Output	1) Audio DAC right channel output 2) While internal audio DAC not used: a. SDATA1 b. GPIO
185	AVCM		Analog	Audio DAC reference voltage
186	AL	GPIO	Output	1) Audio DAC left channel output 2) While internal audio DAC not used: a. SDATA2 b. GPIO
187	ALS	GPIO	Output	1) Audio DAC left Surround channel output 2) While internal audio DAC not used: a. SDATA0 b. GPIO
188	ALF	GPIO	Output	1) Audio DAC center channel output 2) While internal audio DAC not used: GPIO
189	ADACVDD1		Power	3.3V power pin for audio DAC circuitry
190	ADACVDD2		Power	3.3V power pin for audio DAC circuitry
Video Interface (12)				
160	DACVDDC		Power	3.3V power pin for video DAC circuitry
161	VREF		Analog	Bandgap reference voltage
162	FS		Analog	Full scale adjustment
163	DACVSSC		Ground	Ground pin for video DAC circuitry
164	CVBS		Output 4mA, SR	Analog composite output
165	DACVDDB		Power	3.3V power pin for video DAC circuitry
166	DACVSSB		Ground	Ground pin for video DAC circuitry
167	DACVDDA		Power	3.3V power pin for video DAC circuitry
168	Y/G		Output 4mA, SR	Green, Y, SY, or CVBS
169	DACVSSA		Ground	Ground pin for video DAC circuitry
170	B/CB/PB		Output 4mA, SR	Blue, CB/PB, or SC
171	R/CR/PR		Output 4mA, SR	Red, CR/PR, CVBS, or SY
MISC (12)				
101	PRST#		Input PU, SMT	Power on reset input, active low
100	ICE		Input PD, SMT	Microcontroller ICE mode enable
193	XTALO		Output	27MHz crystal output

Pin	Main	Alt.	Type	Description
194	XTALI		Input	27MHz crystal input
44	GPIO0	VSYN YUV1	InOut 4mA, SR SMT	1) General purpose IO 0 2) Vertical sync for video input 3) Digital video YUV output 1
45	GPIO1	HSYN INT4# YUV2	InOut 4mA, SR SMT	1) General purpose IO 1 2) Horizontal sync for video input 3) Microcontroller external interrupt 4 4) Digital video YUV output 2
46	GPIO2	SPMCLK	InOut 2mA	1) General purpose IO 2 2) Audio S/PDIF SPMCLK input
147	GPIO3	INT1# SPDATA	InOut 2mA	1) General purpose IO 3 2) Microcontroller external interrupt 1 3) Audio S/PDIF SPDATA input
148	GPIO4	SPLRCK	InOut 2mA	1) General purpose IO 4 2) Audio S/PDIF SPLRCK input
150	GPIO5	INT3# SPBCK	InOut 2mA	1) General purpose IO 5 2) Microcontroller external interrupt 3 3) Audio S/PDIF SPBCK input
90	GPIO6	YUVCLK	InOut 4mA, SR PD, SMT	1) General purpose IO 6 2) Digital video clock output
99	GPIO7	YUV3	InOut 4mA, PD, SMT	1) General purpose IO 7 2) Digital video YUV output 3
Dram Interface (38) (Sorted by position)				
145	RA4		InOut	DRAM address 4
144	RA5		InOut	DRAM address 5
143	RA6		InOut	DRAM address 6
142	RA7		InOut	DRAM address 7
141	RA8		InOut	DRAM address 8
140	RA9		InOut	DRAM address 9
139	RA11		InOut Pull-Down	DRAM address bit 11
138	CKE		Output	DRAM clock enable
136	RCLK		InOut	Dram clock
135	RA3		InOut	DRAM address 3
134	RA2		InOut	DRAM address 2
133	RA1		InOut	DRAM address 1
131	RA0		InOut	DRAM address 0
130	RA10		InOut	DRAM address 10
129	BA1		InOut	DRAM bank address 1
128	BA0		InOut	DRAM bank address 0
127	RCS#		Output	DRAM chip select, active low
126	RAS#		Output	DRAM row address strobe, active low

Pin	Main	Alt.	Type	Description
125	CAS#		Output	DRAM column address strobe, active low
124	RWE#		Output	DRAM Write enable, active low
123	DQM1		InOut	Data mask 1
122	RD8		InOut	DRAM data 8
121	RD9		InOut	DRAM data 9
119	RD10		InOut	DRAM data 10
118	RD11		InOut	DRAM data 11
117	RD12		InOut	DRAM data 12
116	RD13		InOut	DRAM data 13
115	RD14		InOut	DRAM data 14
114	RD15		InOut	DRAM data 15
113	RD0		InOut	DRAM data 0
112	RD1		InOut	DRAM data 1
111	RD2		InOut	DRAM data 2
110	RD3		InOut	DRAM data 3
109	RD4		InOut	DRAM data 4
107	RD5		InOut	DRAM data 5
106	RD6		InOut	DRAM data 6
105	RD7		InOut	DRAM data 7
104	DQM0		InOut	Data mask 0

Note:
1. The Main column is the main function, Alt. means alternative function.
2. The external TV encoder mode only supports CCIR-656 mode.